MUSEUMS, LIBRARIES,

AND

PICTURE GALLERIES,

Public and Private;

THEIR ESTABLISHMENT, FORMATION, ARRANGEMENT, AND ARCHITECTURAL CONSTRUCTION.

TO WHICH IS APPENDED

THE PUBLIC LIBRARIES ACT, 1850,

AND

REMARKS ON ITS ADOPTION BY MECHANICS AND OTHER SCIENTIFIC INSTITUTIONS;

WITH ILLUSTRATIONS.

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"It is impossible to disguise from ourselves the paramount importance that—public opinion should be rightly informed, rightly instructed, and rightly directed."—BISHOP OF MANCHESTER.

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M.DCCC.LIII.

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PREFACE.

MUSEUMS, LIBRARIES, and PICTURE GALLERIES stand separately upon the title-page of this essay, and the occurrence is not accidental. Although the reader may remember that a museum is defined as "a collection of literary and scientific curiosities, and of the works of artists and learned men," he is requested to consider that in these days each branch of the old museums has grown so extensive (if to be really useful) that only a metropolis can afford to gather portions of a nation's stores under one roof; and that at last it is discovered that even the British Museum is no longer universally thought capable of displaying every acquisition; indeed proposals are weekly made for the separation of the various divisions of the Museum, and their transportation to other localities. We do not attempt to pronounce upon such a separation in that particular instance, nor to publish academical designs for large buildings; but seeing the spread of the establishment of minor museums, either dedicated to a particular object, or so restricted in their opportunities of acquisition as to be either incapable of extension (as many already are by testamentary disposition), or of growing with even moderate

quickness to a state of repletion, we thought it a duty, perhaps a profitable duty, to lay before the public some account of the matters chiefly necessary for consideration, in so far as regards the establishment, formation, security, accommodation, and conduct of such institutions; in the hope that the money which might otherwise be wanting for desirable purchases may not be extravagantly expended beyond recall, that the buildings erected may be adequate to the suitable display of their contents, and that the collections themselves may be not only completely preserved, but arranged in a manner sufficient for use and enjoyment. For this purpose the Act of Parliament which is intended to facilitate the establishment of such institutions, the evidence of many distinguished foreigners as well as natives given to Committees of the House of Commons, and the Reports, etc., thereon, have been combined with the practical knowledge and experience gained in our own professional pursuits.

14[a] *Great Marlborough Street.*
London: January 1853.

P.S. It is supposed that no person projects a museum of any sort, without being able to give a clear definition of its ends and aims, general as well as special, theoretical and practical, and in the abstract as well as in the concrete.

ANNO DECIMO TERTIO & DECIMO QUARTO

VICTORIÆ REGINÆ.

CAP. LXV.

An Act for enabling Town Councils to establish Public Libraries and Museums.

[14th *August* 1850.]

WHEREAS it is expedient to promote the establishment and extension of public libraries, and to give greater facilities than now exist for establishing and extending public museums of art and science, in municipal boroughs, for the instruction and recreation of the people: be it enacted by the Queen's most excellent majesty, by and with the advice and consent of the lords spiritual and temporal, and commons, in this present parliament assembled, and by the authority of the same, that an act passed in a session of parliament held in the eighth and ninth years of the reign of her present Majesty, intituled *an act for encouraging the establishment of museums in large towns*, shall from and after the passing of this act be repealed; and that it shall be lawful for the mayor, upon the request of the town council of any municipal borough (the population of which, according to the last account taken thereof by authority of parliament, exceeds ten thousand persons), to ascertain whether the provisions of this act shall be adopted for such borough, in manner following; that is to say, by causing a notice to be affixed on or near the door of the town hall of the said borough, and on or near the door of every church or chapel within the said borough, and to be inserted in some newspaper published

in such borough, or, if there be none such, in some newspaper published in the county in which such borough is situate, and circulating in such borough, specifying on what day, not earlier than ten days after the affixing and publication of such notices, and at what place or places within the said borough, the burgesses are required to signify their votes for or against the adoption of this act; which votes shall be received on such day, commencing at nine of the clock in the forenoon and ending at four of the clock in the afternoon of such day; and the said notice shall be to the effect of form No. 1 in the schedule hereto annexed.

II. And be it enacted, that the mayor shall appoint places and persons for taking the said votes, and they shall be there taken by such persons, and such questions may be put to each voter, and with such liability in case of a false answer, as at elections under the act to provide for the regulation of municipal corporations in England and Wales; and the declaration of vote of the voters shall be to the effect of form No. 2 in the said schedule.

III. And be it enacted, that every burgess who shall be enrolled on the burgess roll for the time being of such borough shall be entitled to vote for or against the adoption of this act, and no person who shall not be enrolled on such burgess roll for the time being shall be entitled so to vote; and the mayor, in the presence of two or more members of the town council of such borough, shall examine the votes, and shall, by public notice in manner herein-after mentioned, declare whether two thirds of the votes given have been given in favour of the adoption of the said act; and the adoption or non-adoption of this act shall be decided by such number of votes as aforesaid; and notice of the adoption of this act by the borough shall be forthwith given by affixing the same at or near the door of the town hall of the said borough, to the effect of form No. 3 in the

said schedule; and if it shall be determined in manner aforesaid that the provisions of this act shall be adopted for such borough, then it shall be lawful for the town council to purchase or take on rent, with or without payment of fine, any lands or buildings for the purpose of forming public libraries or museums of art and science, or both, and to erect, alter, and extend any buildings for such purpose, and to maintain and keep the same in good repair; and that for the purchase, building, extending, altering, and repairing such lands and buildings, and payment of such rent and fines, and for other purposes of this act, and for the payment of any principal money and interest borrowed under the authority of this act, it shall be lawful for the council to levy, with and as part of the borough rate, or by a separate rate to be levied in like manner as the borough rate, such sums of money as shall be from time to time needed: provided always, that the whole amount of rate levied for the purposes of this act do not in any one year amount to more than one halfpenny in the pound on the annual value of the property in the borough rateable to the borough rate.

IV. And be it enacted, that out of the monies to be raised under the provisions of this act it shall be lawful for the town council, or for such committees as they shall appoint for all or any such purposes, from time to time to purchase and provide such fuel, lighting, fixtures, furniture, and other similar matters, for the convenient and useful occupation and enjoyment of such libraries, museums, and premises, and to appoint such officers and servants, with salaries and remuneration, and to make such rules and regulations for the safety and use of the said libraries and museums, and for the admission of visitors and others, as to them shall seem fit; and that any such committee may be appointed for such times only and composed of such persons (whether members of the council or not) as the council may think fit, and may at any time be dissolved by the said council.

V. And be it enacted, that for the purchase of such lands, and the erecting, extending, altering, and repairing of such buildings, it shall be lawful for the council of any such municipal borough as aforesaid, from time to time, with the approval of the commissioners of Her Majesty's Treasury, to borrow at interest such sums of money as may be required for the same, on the security of the said yearly amount of borough rate authorized by this act.

VI. And be it enacted, that the lands and buildings so purchased, erected, extended, or altered as aforesaid, and also all books, maps, and specimens of art and science which may be presented to, and all fixtures, furniture, and articles of every description which may be presented to or purchased for, any such library or museum, or to or for the said council for the purposes of such library or museum, or to or for any committee appointed by them, shall be vested in and held upon trust for ever by the mayor, aldermen, and burgesses of the borough in which such library or museum shall be situated, and shall be managed by the council of the borough (or by a committee or committees appointed by them), and kept in fit and proper order, for the benefit of the inhabitants of the borough and others resorting thereto.

VII. And be it enacted, that admission to such libraries and museums shall be free of all charge.

VIII. And be it enacted, that if the burgesses shall determine in the manner aforesaid against the adoption of this act, it shall not be lawful within two years after such determination again to take the votes of the burgesses of the said borough in manner aforesaid for the purpose of ascertaining whether the provisions of this act shall be adopted for such borough.

IX. And be it enacted, that, notwithstanding the repeal of

the said act hereby repealed, all museums established or begun under the provisions of the said repealed act may be lawfully maintained, completed, and managed by the ways and means in this act provided, in all respects as if such museums had been established and begun under the sanction and provisions of this act.

X. And be it enacted, that in citing this act in other acts of parliament and in legal instruments it shall be sufficient to use the expression "Public Libraries Act, 1850."

XI. And be it enacted, that this act may be amended or repealed by any act to be passed in this session of parliament.

SCHEDULE.

No. 1.

In pursuance of the provisions of an act of Victoria, chapter for enabling town councils to establish public libraries and museums, the burgesses of this borough are hereby required, on the day of to signify by a declaration, either printed or written, or partly printed and partly written, and to be delivered to the mayor or his deputy at the places under mentioned, their votes for or against the adoption of the aforesaid act.

(Signed) *A. B.*, Mayor.

N.B.—The situation, division, and allotments of the differ-

ent places for delivering the said votes are as follows: [*Here insert the place or places at which the burgesses are to vote, in like manner as in elections under the act to provide for the regulation of municipal corporations in England and Wales.*]

No. 2.

I do hereby vote [for *or* against, *as the case may be*,] the adoption of the act of the year of the reign of Queen Victoria, chapter , for enabling town councils to establish public libraries and museums.

(Signed) *A.B.*

[*Here insert the name of the street, lane, or other place in which the property for which the voter appears to be rated on the burgess roll is situated.*]

No. 3.

Notice is hereby given, that this borough has adopted the provisions of an act of the Victoria, chapter , for enabling town councils to establish public libraries and museums, and that the numbers of the majority and minority of votes given for or against the adoption of the said act are as follow; that is to say, votes for the adoption of the said act, and votes against it.

Dated this day of A.D.

(Signed) *A.B.*, Mayor.

MUSEUMS, LIBRARIES,

AND

PICTURE GALLERIES.

GENERAL CONSIDERATIONS.

In adopting this act for a museum, in which term may now be included libraries and picture galleries, it seems that the first step may be taken in three ways. On the one hand, individuals may make calculations and speeches, and influence a population to impose the halfpenny rate, *and at once begin with a proper building;* or they may apply to the public for a fund to be expended at once in purchases, to be lodged in the *best substitute for a proper building* that can be found, and so continue to collect purchases and donations, until the building is evidently no longer a suitable case for its contents; or if that confidence will not be previously given to the promoters of the museum, they must *temporarily occupy premises*, in which to receive donations, until the ratepayers perceive the propriety of providing a building for the reception of so important a nucleus for the future collection. Upon a careful consideration of these three modes of operation, it will be seen that the first is the most economical; but it has this disadvantage, that the architect must provide accommodation for a collection of which the extent, either wholly or in its most important parts, is at the time unknown to any one.

After the notice No. 3, required by the third section of the act, has been properly given, the next step is to put in operation the fourth and sixth sections, by the appointment, as directed therein, of a committee or committees.

This thoroughly business manner of proceeding will require a little consideration: it is not perfectly clear that persons not being members of the appointing body can be placed upon these committees, but it is to be hoped that amongst the appointing body will be found at least one person sufficiently conversant with the subject of each great department of the museum to act as honorary curator thereof, so that it shall be arranged upon scientific principles. When the museum is very extensive, each honorary curator might be induced further to act as reporter, or secretary, or chairman of a sub-committee of gentlemen, each of whom would take under his care the superintendence of a branch of the department (see the examination of article *b*, LIBRARIES).

It may be useful to suggest that a majority of the curators should be present to form a quorum of each committee for general purposes; that the committees should meet at least once every three months; that the sub-committees should pass the accounts of their department, and present recommendations of purchases to the committee: this governing body should recommend officers and servants, draw up rules and regulations for the management, safety, and use of the buildings and collections, decide as to all purchases, advise the town council as to alterations, repairs, etc., and report to it, from personal inspection, the state of the building and of the collection, at least once in the year.

It is very remarkable that the act providing for gratuitous admission to the collections, formed under its provisions, leaves the question, as to the persons who are to be admitted, in the

discretion of the town council, who might choose to give the power of entrance to a very limited class. It is stated with regard to the libraries in Paris, that if a beggar should come *in rags*, *there might be some difficulty*, but every respectably dressed person is admitted. The act, also, does not appear to give power to apply the money, raised under its provisions, to the purchase, etc., of books and specimens, or to repairing those which may be given by private munificence. These imperfections will, no doubt, soon be remedied.

Before passing to the duties of the architect who may be employed, it will be best to consider in detail some of the following heads as applicable to each division of this essay.

MUSEUMS.

The requisites of a good Museum as a building are not easily propounded; the most important points depend upon two persons, the client and the architect.

The client may be one person, or a body of individuals, and the latter may be guided by an influential member of their corps, or by their servants; in any one of these cases, the architect hears, it is to be hoped, but one voice, and the client has to take the *onus* of deciding the following points; viz.:— a. The site, with regard to the population. b. The departments of art and science which are to be accommodated. c. The largest size of any object likely to enter the museum. d. The extent of accommodation to be provided for each department. e. The arrangements as to the admission of the public, and the amount and nature of study which will be allowed. f. The accommodation necessary, beyond that for the collection, as offices, rooms for officers, lecture and class rooms, conveniences for servants, visitors, etc.

All these points should be so carefully studied by the client, as to enable him to consult with the architect upon the written decisions to be given as instructions for the designs. There are also others, on which it is probable that the client will think his own opinion, or that of his friends, sufficient; such as, g. The preservation of the collection.

a. The situation of a museum, or of a library simply, or of a picture gallery, will naturally be generally fixed where the ground is least costly to purchase; the soil, for about half a mile round, should be dry, certainly excellently drained; the site (which may or may not be capable of extension) should be so situated as not to be overshadowed by any buildings or other objects, nor be subject to vibration, and should possess the advantage of extreme quietness, and reasonable accessibility.

If a temporary location be granted, the architect can only modify an inconvenience in one place, or alter an objectionable point in another; the following pages, however, may be as useful to him as if he were called upon to design a building; for his object, in both cases, must be to remedy or prevent any difficulties. Whatever may be the site chosen, it is asserted by us in this essay that side lights are objectionable, except for rooms in which the chief pursuits are those of daily life; such as the apartments provided for the officers, servants, reading rooms, etc.; if the side lights be placed at least ten feet from the floor, and in large rooms, such as the saloons of the British Museum, (or say 40 feet wide and 30 feet high,) the objection is only diminished, not obviated. But this will be treated upon hereafter. Fire is also to be guarded against, especially as to the construction of the roofs, fittings, and furniture, in which the use of wood, rendered incombustible, for the first, and of slate or iron for the latter, is indispensable.

b. With regard to the number of departments, besides those of the Committee and Secretary, to be provided with accommodation, the arrangement of the British Museum may be mentioned; it would give, with reference to a provincial museum, four principal departments, viz., Antiquities, Natural History, Library, and Picture Gallery. As the two last form separate divisions of the present work, the reader is referred for the opinions entertained thereon to the pages devoted to them.

The department of Archæology is subdivided into the branches of:—1st. Ethnology, or the relationship of tribes, extinct or living, represented by saloons filled with articles relating to the customs and religion of various nations, and perhaps forming a department of itself: 2nd. Ancient Sculpture, arranged according to the history of that art: 3rd. Medals, which represent the history of the monetary system, and of a branch of the Fine Arts, as well as elucidating history generally: 4th. Ceramic Art, as representing taste applied to one of the humblest natural materials, besides indicating a portion of the history of the Fine Arts: to which may be added, 5th. Mediæval Antiquities (placed chronologically probably would be best). The department of Natural History is subdivided into the branches of:—1st. Zoology, separating the beast, the bird, the fish, etc.: 2nd. Botany: 3rd. Geology, separating the fossil and mineralogical collections.

It is obvious that such an arrangement as that of the British Museum *is only perfect as it is limited;* those who conceive the formation of a museum which shall represent the sciences, arts, and manufactures of a district, of a nation, or of the universe, should consult the "Classification of subjects in the thirty classes into which the Exhibition of the Works of Industry of all Nations, 1851," was divided. It is placed at the commencement of the volume containing the reports of jurors, and should

be carefully scrutinized, as experience has already shewn the difficulty of satisfactorily making such classifications.

c. The determination of the extreme size of the objects which are to be received into the collection is of the highest importance, as it involves the question of the absolute weight upon some of the floors, and consequently affects the stability of the structure: besides, if too low a standard be adopted, it may be found impossible for a large yet light object to enter either at door or window. Probably there is nothing in the upper floor of the British Museum so tall as twenty feet, which may be quoted as the height of that floor: if by accident some object still taller were obtained, it might be placed under the lantern light; fourteen feet in the clear at the walls is the height which has been adopted in the design plate 7, fig. 4, as being sufficient for buildings of moderate pretensions. The question of a foot more in the height would not at first seem of importance in the consideration of a gallery, but regarded as the addition of at least a fifteenth of the cost of the walls for every foot in height, it is really an essential item in the prime cost of the building; and many galleries might be crippled in other features by an extravagance of this sort, when the funds are either not too large for a proper commencement, or unlikely to procure in future any object that would justify the original fault.

d. The extent of accommodation for each department decides the number of rooms which are to be provided for the museum, and must considerably influence the general design; because when the collection is meant to be multifarious and does not yet exist, the only means of escaping from difficulty is to require a series of rooms perfectly alike, and either of such moderate dimensions as to be easily divided among the classes, or of such sizes as to admit of future subdivision. As one element for calculation, the architect may assume that the presses or cabinets will never be less than eighteen inches deep, that is to say, he

may judiciously add three feet to the width he may require for the apartments which are to contain such cabinets or cases. Two other points may be made useful in preventing difficulties in a large museum; viz., the construction of the wall-cases separately, in uniform lengths (say of four feet) such as can be readily moved; and the constant use of such a system of lighting from the roof as will at intervals allow of partitions being made which will admit one or more such lengths of cases. In this way an increasing museum with small funds for building may be commenced, and extended, on a systematic plan: no business can be economically transacted in a museum where either the collections of each department are scattered; or where the specimens in any branch of a department are not kept together: unfortunately, these faults exist in some of the most highly-praised museums.

t. The remarkable regulations as to admission into public museums comprise: no opening of the doors unless a principal attendant be present; no admission except by the public entrance to any persons except the staff; the porter not to allow the entrance of any person out of the hours of public service, except upon a written order; the power of the committee and keeper to forbid the entrance of obnoxious and certain other persons; the rest of the public, if decently attired (hats, not caps, are generally required in France, except for soldiers and sailors), to be admitted either upon signature of name, address, and occupation, or in some cases without such formality; the public admitted with children in arms (to the National Gallery?); with children above eight? years' old (to the British Museum). In France, special notices are issued that no dogs are allowed; and a charge of rather more than a farthing is made for taking care of canes, sticks, parasols, umbrellas, and arms of any sort, except those of soldiers, which are put aside gratuitously for every rank up to that of ensign; and no bags, pouches, wallets, baskets, or boxes are permitted to pass

the porter. In Portugal, persons in the usual cloak are not allowed to enter some buildings. It is of course forbidden to smoke, and it should also be prohibited to light pipes or cigars within the precincts of the building.

The hours of attendance daily, and the days on which the building is to be closed, are to be considered. Among the regulations existing on the continent, are some such noticeable features as the following: strangers and persons merely curious to see the building, admitted on holidays from eleven till four, at other times only before or after the hours of service to the public; no permission to study beyond these hours; persons in public offices, and men in literary or scientific pursuits, admitted during daylight, while the keeper is in the building. In a small museum not containing many exposed articles difficult of removal, it is almost absurd to close the collection on particular days for the purpose, nominally, of leaving students to work uninterruptedly: the plan most advisable seems to be the earlier opening of the museum, or the removal of the objects under inspection to rooms set apart for the purpose.

f. It is submitted, as a constant result of experience, that a museum for a provincial town should not be without a lecture-room: its utility at the Museum of Economic Geology is self-evident, and the noble apartments of the British Museum would amply suffice for the purpose; but the utility of a theatre is, perhaps, greater in proportion when attached to a small collection, than when part of a large one, because the best means of ensuring the permanent and successful establishment of a museum appears to be the employment of some system of lecturing.

g. Whatever care may be taken by placing in each apartment a warder charged with the protection of the collection, every

thing may be said to be placed in danger of destruction if the proper ventilation and warming of the gallery be not carefully regarded. It may be noticed that the chief merit of the present advocacy of skylight rooms is that they almost enforce, if they do not of themselves absolutely ensure, the success of the natural mode of ventilation, sufficient ventilating apertures being placed in the highest part of the ceiling; and as there can be no difficulty about the admission of fresh air (either already warmed, or directly from the exterior), we will at once pass to the heat to be obtained. An equable temperature is necessary; at Berlin, where the gallery is heated with warm air, the apertures for its admission are closed when the thermometer in the rooms indicates a rise to within 10° of the summer heat. In order to obviate the extreme dryness of that air in every place, a vessel of water is provided in each room; in one day a large quantity is quite exhausted, and Dr. Waagen considers that this is not only useful for the pictures, but also for the public, because otherwise the air would be too dry and not wholesome. If called upon to name any system of heating, we should certainly recommend, in the first place, a low pressure hot-water apparatus.

The duties of a gentleman placed in charge of a museum soon become little more than general superintendence, correspondence, and communication as secretary to the committee, in short a clear-headed man of business habits is more useful than an archæologist, or a follower of natural philosophy. His assistants, besides having a knowledge of languages, are the persons who should be really competent (see also this subject in article g, LIBRARIES) to advise upon the purchases of works for their special departments and to classify them. In many cases the appointment of honorary curators is most desirable, as then the heads of the departments have no occasion for disputes as to superior utility, precedency, and the whole list of causes for personal quarrels.

The requisites of a good building for a LIBRARY are much better understood than those for the other two divisions of this essay. The questions which the client has to decide are of great consequence, but their solutions are more liberal to the architect than those of museums and picture galleries.

The client takes the *onus* of deciding the following points: a. The site or sites with regard to the population. b. The general division of the books. c. The probable extent of the accommodation to be provided for each branch of such division. d. The arrangements as to the admission of the public, and the amount and nature of study which will be allowed. e. The accommodation necessary, beyond that for the collection; as rooms for offices and officers, reading, and evening reading rooms, conveniences for servants, visitors, &c.

All these points should be so carefully studied by the client, as to enable him to consult with the architect upon the written decisions to be given as instructions for the plans. There are also others, on which, it is probable, that the client will think his own opinion, or that of his friends, sufficient, such as:— f. Whether the collection is to be a lending library, or simply furnished with a public reading room. g. The preservation of the collection.

a. Besides the conditions laid down in the preceding divisions relating to public museums, it must be noticed, that in large towns, like Liverpool, there should not be one huge library, put in the cheapest spot that may offer itself, but there should be district libraries, one of their great recommendations being to save time in going from one neighbourhood to another.

b. In determining the general division of the books, many

circumstances render desirable the adoption of that prefixed to Brunet's *Manuel du Libraire*, &c. 8vo. Paris, 1844, of which the principal features of each subject are alone extracted on the present occasion. Each branch should have its history, mode of study, theory, dictionaries, and general treatises prefixed.

I. Theology.—𝔞. Bible, 647 works. 𝔟. Liturgies, 112. 𝔠. Councils, 40. 𝔡. Fathers, 344. 𝔢. Systematic theology, 992. 𝔣. Singular opinions, 75. 𝔤. Judaism, 15. 𝔥. Oriental superstitions, 38. 𝔦. Freethinking, 50.

II. Jurisprudence.—𝔞. Natural and social law, 10. 𝔟. Political law, 12. 𝔠. Civil and criminal law, 742. 𝔡. Ecclesiastical law, 130.

III. Sciences and Arts.—𝔞. Philosophical sciences, 900. 𝔟. Physics and chemistry, 262. 𝔠. Natural sciences, 2031. 𝔡. Medical sciences, 1259. 𝔢. Mathematics, 1100. 𝔣. Occult philosophy, 178. 𝔤. Fine arts, 1179. 𝔥. Mechanical arts and trades, 89. 𝔦. Gymnastics, 171. 𝔨. Games, 36.

IV. Belles Lettres.—𝔞. Philology, 1495. 𝔟. Rhetoric, 220. 𝔠. Poetry, 4711. 𝔡. Prose fictions, 1173. 𝔢. Criticism, 509. 𝔣. Dialogues, 36. 𝔤. Epistles, 273. 𝔥. Polygraphists, 453. 𝔦. Collections and extracts, 116.

V. History.—𝔞. Prolegomena, 1866. 𝔟. Universal, ancient and modern history, 71. 𝔠. History of religion and superstition, 1341. 𝔡. Ancient history, 335. 𝔢. Modern history, 5705. 𝔣. Archæology, 3122.

VI. Encyclopædias, journals, reviews, &c.

The figures above attached refer to the number of *works*, not of volumes, mentioned under each head in Brunet's Manual. Experience has shewn, in a library of more than 10,000 volumes, that they averaged $2\frac{1}{2}$ volumes to a single work or title.

Each member of the Library Committee should give, in addition to his general duties, his attention to the formation or perfection of that branch of these divisions with which taste, opportunity, or education may have made him well acquainted.

c. In determining the probable extent of the accommodation to be provided for each branch of whatever division of the books may be adopted, the great point is, to decide what is to be the general or particular *object* of the library in question, public or private; and if public, whether it is to be accompanied by a reading room, or whether the books are ever to leave the building, *i. e.* to be a *lending* library. Libraries are not storehouses merely, but should be the *fittest* places of study, in which the overawing abundance of literary resources and of applicants for them, must secure that precision of working, and attention to the public, both in matter and form, which can never be attained in the secluded study of the German author, or in the turmoil of a French café.

Of course the greater the accessibility to a reader, the more restriction will there be as to the books in a library; the regulations as to the admission of books, require notice at some length. The recommendation of the librarian and of the superintending honorary curators, ought to carry some weight; it is always desirable to have a register for the titles of books that are wanted by the readers, with the understanding that they will be recommended for purchase, if a certain number of persons ask for them; sometimes a number, two, five, or ten, &c. if fixed beforehand in proportion to the extent of the library, will give a desirable freedom of choice.

Public libraries, to be successful, should be well supplied with new books, and this causes a difficulty in preventing the reading room from becoming a sort of club, which it ought not to be. The librarian may give every facility to those who want

to acquire information or to improve themselves, but the reading room ought not to be merely a saloon to which people could go and spend five or six hours at leisure with the first book whose title they may remember; the setting apart therefore a room for reading periodicals, such as literary and scientific journals, &c. is a really grave question, and is not here recommended; the general reading room, if supplied like those of the British Museum and Bibliothèque Nationale at Paris, with dictionaries of all sorts, the best editions and translations of classic authors and principal polygraphists, the elementary and general treatises upon the arts and sciences, the best works upon ancient and modern history both general and particular, topographical works, the principal voyages, the academic collections, the blue books, and a gazette or annual register, with a few of the literary and scientific journals—will always be sufficiently amusing for a lounger in a public library; such a reading room is nearly a representation of the library; which ought to possess those large collections, such as memoirs of foreign societies, laws, &c. not to be found in private unprofessional libraries, and of which the want is more felt in provincial towns than anywhere else.

There are books of universal interest which should not be wanting in any library; but at the same time, in order to make a provincial public library perfectly useful, the wants of the population ought to be first consulted; it is not intended here to adopt the idea that, "It should never be attempted to use, as a popular library for the working classes, the large libraries intended for a superior class of readers," except in one sense, viz., that to be well supported by the lower classes, the library must contain books that a narrow-minded librarian might consider only amusing. It might be sufficient for the committee to join with themselves on each occasion the most regular readers, and go to the ballot for any book proposed; an absolute majority should be required, or else grave inconveniences may

occur. In such a system, suggestions from the working classes would receive attention, and all works would be admissible, for religion, and politics, and novels, could not be excluded from the shelves. The deficiency of modern foreign works in almost all English libraries, is mentioned as something very observable in relation to the great spread of the knowledge of the French and German languages.

The statistics of the mechanics' institutes shew that the members read a little history and political economy, and a great deal of fiction; in the United States, the same thing occurs, with the addition of travels, agriculture, and horticulture, while in England, the demand for works on the different sciences is gradually increasing. In addition to political, military, civil, literary, artistic, scientific, and natural history, the committee will have to provide works of local importance; for instance, Manchester possesses a large class of operative naturalists, a set of botanists, and a museum of natural history; Birmingham and Newcastle have given attention to geology; in the Midland Counties, the works most in demand seem to be the older historic chronicles and works of similar interest.

Novels and other ephemera are not admitted into some libraries; in others, novels, plays, light or comic literature, political or occasional pamphlets, are not put into the reading room, nor given, except to a reader who shows to the librarian that they are wanted for literary or historical purposes; for a reader having most serious objects of study may need to have recourse to books of light literature in prosecuting his purpose. Several libraries of the mechanics' institutes are said to possess too many volumes of light literature; however, the proportion of poetical, political and historical works, and of translations of French political histories, is described as increasing. The demand for books relating to different occupations and trades is said to be very limited, compared with that for the above-mentioned

branches of literature; it is not only probable, but given in evidence, that miners, for instance, never wish to study mining, thinking that they know more about mines than the writers of books: in short, popular libraries must have novels and light literature.

In order to provide for various difficulties, and for the necessity in every great library to make a selection—leaving some books in the reading room for the public to spoil, and keeping the rest separate—every library must want two, three, or even four, copies of many books.

When therefore the committee has taken into consideration the nature of the works generally desirable, and has made some calculation, based upon the extent to which they will favour particular departments, the division of the number of volumes in each group by 46 may be fairly supposed to give the architect the number of times in which a space two feet high by two feet wide will be required: *i.e.* four square feet will hold about 46 volumes on an average throughout a library, be it a public establishment or a large private collection. This is easily tested by application to even a moderate bookcase.

D. Among the regulations specially affecting public libraries abroad are the following: the public admitted to view the library, but not the reading rooms; children under sixteen (on a note of their names and addresses signed by a parent or schoolmaster), and between sixteen and twenty years (upon production of their tickets of admission to a college or great school), allowed to be readers, but in some cases those under sixteen enter with a proviso that they accompany a person above twenty-one years old, who is to be responsible for their conduct; no admittance in the evening, except to readers engaged in serious study; books brought in by a reader, to be shown to an attendant, who will give passes for them; in

some places there is no such pass given at all, but on the contrary all books once in the library must remain there; it is forbidden to walk about, to converse, to stand near the readers or to look at their books, to look at papers on the desks of the attendants, to sit anywhere but at the tables, to write upon the furniture or walls, to sully the building in any way, or to attempt to pass into the interior. Many of these ordinances are fortunately not thought requisite in writing, as warnings to readers at the British Museum, where they are even permitted to assist themselves to the books of reference which are placed in the cases around the room; on the continent persons are reminded that they are not to touch anything exposed to view, not to use the steps and ladders, in short not to lay hands upon anything not delivered to them by the attendants, except, in a few cases, the catalogues.

The directions issued for the British Museum, which may be varied according to circumstances, stand as follows:

"The reading room of the museum is open every day, except on Sundays, on Ash-Wednesday, Good-Friday, Christmas-Day, and on any Fast or Thanksgiving Days ordered by authority: except also between the 1st and 7th of January, the 1st and 7th of May, and the 1st and 7th of September, inclusive.

"The hours are from nine till four in the months of November, December, January, and February; from nine till five in the months of September, October, March, and April; and from nine till six in the months of May, June, July, and August, with the exception that on Saturdays in these last months it closes at five. [The hours of some evening libraries range between five and eleven.]

"Persons under eighteen years of age are not admissible.

"The librarians are strictly enjoined to use all possible despatch in supplying the readers with the printed books or manuscripts they may apply for; but in so extensive a library it may not be possible to find every article immediately.

"Readers, before leaving the room, are to return the books or manuscripts they have received to an attendant, and are to obtain the corresponding ticket; the reader being responsible for such books or manuscripts so long as the ticket remains uncancelled.

"Readers will be allowed to make one or more extracts from any printed book or manuscript; but no whole, or greater part, of a manuscript is to be transcribed, without a particular leave from the trustees. The transcribers are not to lay the paper, on which they write, on any part of the book or manuscript they are using; nor are any tracings allowed without particular permission of the trustees.

"No person is, on any pretence whatever, to write on any part of a printed book or manuscript belonging to the museum; but if any one should observe a defect in such book or manuscript, he is requested to signify the same to the officer in waiting, who will make proper use of the information.

"It may be sufficient merely to suggest, that *silence* is absolutely requisite in a place dedicated to the purposes of study.

"N.B. *Readers are, under no circumstances, to take any book or manuscript out of the reading rooms.*"

In compliance with the continental system of education, translations of the classics are denied to young persons under sixteen years old, and to those above that age and under twenty-one who do not show that they are at a college; there must be a power in the hands of the librarian to deny certain books to youths and to ladies; besides these there are regulations in the libraries abroad, which do not allow him to give out *editiones principes*, etc., except at discretion; to issue engravings, maps, plans, etc., until they are bound, etc.; or to furnish any works until their edges have been cut, and the proper process of collation, stamping, placing, numbering, and cataloguing has been performed; manuscripts are to be asked of the librarian himself, and are to be read at a separate table; particular books,

periodicals, collections, and literary and scientific journals in parts, are only to be read at reserved tables, on which no ink is allowed, and where extracts or sketches must be made in pencil only; evening readers are expected to ask for the works which they will want, on the evening or morning beforehand; if only one attendant be in the room, he is to be excused leaving it in search of books; at the British Museum, manuscripts are not furnished half an hour, and printed books a quarter of an hour, before closing; in some libraries the latter are not given half an hour before that operation. A good specimen of the mode of asking for books is offered by the example of that used in the British Museum, of which a copy, the size of the original, is subjoined.

(IN FRONT.)

Press Mark.	Title of the Work wanted.	Size.	Place.	Date.

(Date) _____ (Signature).

Please to restore each volume of the Catalogue to its place, as soon as done with.

(AT THE BACK.)

READERS ARE *PARTICULARLY* REQUESTED

1. Not to ask for more than *one work* on the same ticket.
2. To transcribe *literally* from the Catalogues the title of the Work wanted.
3. To write in a plain clear hand, in order to avoid delay and mistakes.
4. Before leaving the Room, to return the books to an attendant, and to obtain the corresponding ticket, the READER BEING RESPONSIBLE FOR THE BOOKS SO LONG AS THE TICKET REMAINS UNCANCELLED.

N.B. Readers are, under no circumstances, to take any Book or MS. out of the Reading Rooms.

In some French libraries the reader gets a numbered pass on entrance, and an attendant calls the numbers in regular order at the close; but this seems unnecessary, for at the British Museum, a bell, rung five minutes before the time, is obeyed by the restoration of the books by the readers. The supply of books is variously determined abroad as follows: No reader to have more than one book at a time; than two volumes at a time, and only one of each work that may happen to be in more than one volume, especially if in octavo or duodecimo; than two works at a time; than three books during one time of service, the third not to be given while any other demands remain unsupplied; while the most liberal arrangement on the continent does not allow many books, but leaves the quantity of the supply to the discretion of the librarian: books in parts, and journals, not to be given out, except scientific or law periodicals, at discretion. In the reading room of the British Museum there is practically no difficulty in having even more than fifty works at a time, and unbound works, or parts of works, are frequently delivered in reasonable cases.

It is very rational to lay down rules that books of folio or quarto size should be laid flat on the desk or table, so that the backs may not be broken; that no book should be weighted by another to keep it open; and that no books should be held upon the knees. Almost all libraries provide pens, ink, and blotting paper (the Berlin Royal Library does not allow pen and ink; notes must be taken in pencil only), and some add paper weights and paper knives; it is curious to observe that a French regulation states that if a penknife be wanted, it must be asked of an attendant, and returned to him. In some cases half a sheet of letter-paper is given to the reader: of course it should not be placed on the books, which are not to be put between the paper and inkstand. It is a matter of discretion with the committee or librarian, whether any tracing should be allowed; artists accustomed to that practice might be permitted

to use tracing paper that was not greasy or oiled, during good behaviour, as in some continental libraries, where *papier végétal* or *à la gelatine*, or *de glace* is stipulated; in others, especially when manuscripts are being read, tracing, bread crumbs, the use of compasses and colours, are absolutely prohibited: colours are allowed in the British Museum. There can be no question that blotting, underlining, writing, sketching, or folding leaves in a book, are instances of bad behaviour, deserving immediate expulsion, but these are sometimes observed; it is found to be a good plan to insert in the registry of admission an engagement to replace precisely, such books, binding included, or even to pay double the price of the entire work, at the option of the librarian; such spoilt books, although replaced, to remain the property of the library.

If many persons require the same book at a time, it should be given to the applicant whose study is nearest the subject of the book; if this does not apply, then it must be bestowed at the pleasure of the librarian.

In England, where comfort is so much studied, it is hardly necessary to announce, as is the practice abroad, the days on which warming the rooms will commence and cease: at all events, if the times are fixed, it will prevent many complaints. Where stoves or open fires are used, it is customary in France to forbid the approach of readers to the fire; and this is even the case in the hall of the reading room at the British Museum. Sometimes it is ordered that no fire, nor any light except in a closed lantern, be taken into a library.

ε. The accommodation beyond that which is absolutely necessary for the books, must also be decided by the client. The room for the lending library (which should always be kept separate), the general reading room, the evening reading room (if separate from that to be used in the day), the room for

receiving and unpacking, registering and cataloguing books, rooms for each division of the staff, a hall, servants' room, furnace chamber, cloak rooms well warmed, for males and females, are actual necessities.

The above remarks are not in themselves sufficient to guide the formation of the client's opinion upon each point; they are so intimately connected with the following suggestions, as to require reference and comparison.

f. The question of forming a lending library is also formidable. Although scarcely 50 libraries out of 350 public ones abroad and at home lend on any condition, there can be no doubt that, in general, the books of public libraries in England will, to a great extent, be lent, as is the case in numerous instances abroad: it may be said, that all the public libraries in France, Belgium, and America, are lending libraries (nearly all those in the United States lend their books); and in Denmark, where the loan of books is considered to be the principal utility of public libraries, even the University library is open on liberal arrangements. This University library of Copenhagen, with 150,000 volumes including pamphlets, and increasing at the rate of 600 volumes per annum, lends about 15,000 volumes a year to the students whether resident or not in the college; each work is lent for six weeks, but to no one out of the city unless the borrower be actually engaged on a literary work. At Ypres, a library, containing from 9,000 to 9,500 volumes, representing about 3,400 works (without counting pamphlets), is divided into two parts, viz.: a. the true "library" books, which are only lent to the class of important personages, and b. about 1,500 or 2,000 volumes of less value, are lent indiscriminately. At Stockholm, a library of 80,000 bound books, growing at the rate of 8,500 volumes a year, and open daily from eleven till two, lends about 6,000 annually.

In university and other corporation libraries, books are sometimes lent upon the introduction given by a particular professor or curator, who becomes responsible; and most libraries of societies are lending libraries for the members. In the Edinburgh University library, twenty-five volumes are lent at a time to any individual member.

It is true that the experience of some libraries shews that the loan of books, if not prejudicial, is at least inconvenient, from the necessity of careful applications for their return, yet in the university city of Ghent, between 5,000 and 6,000 volumes are lent in a year without any damage or loss. It has been calculated that a loss of about five per cent. on the books annually added, may be stated as the average reasonable depreciation of a lending library; and this loss and disadvantage may be chiefly ascribed to the want of good regulations, especially as to period of loan and vouchers of respectability, which would secure the library from any loss, except that of fair wear and tear, which must always be attendant upon the system, and forms the most considerable objection to it; Sion College library has not, in twenty years, lost twenty-five pounds worth of books out of a collection of more than 35,000 volumes. In Paris, great loss has resulted from the insufficiency of the regulations respecting the return of books, and it is reported to be notorious, that a considerable number of books upon one subject have been absent for years without being returned. In the New York Mercantile library, from ten to twenty copies of many books are worn out in the first five years of their circulation; in fact, more are damaged than lost.

It is recorded that in the United States, a library, once a lending library, has hardly ever ceased to be so; though some libraries, once public, have nearly ceased to be so. Complaints have been made in some cities about abuses in lending libraries, but they may be supposed to arise in consequence of inadequate

regulations, and might have been obviated by better management; there should certainly be an assurance of responsibility equal to double the value of the book lent out; the Philadelphia library lends to any one depositing three times the value of the work, and paying sixpence for its use; and University College in London, lends to its students on a deposit.

The experience of the mechanics' institutes in the midland counties shews, that the circulation of each volume in their libraries amounted to six issues annually: at Leicester, a library of 3,000 volumes showed 13,000 issues, and, subtracting books that do not go out, the average was perhaps thirteen or fourteen issues per volume a year; but at least three times the number of volumes may be taken safely, as the average of the total issues.

In some establishments, no books are lent except upon proof of the incapability of the borrower to go to the library; this rule might be relaxed in favour of persons engaged in literary tasks of great extent and duration; in others, the favour is granted by the librarian or trustees; in some, they are delivered only to members of academies, professors, or teachers; while in others, they are freely delivered to persons of known respectability. In almost every case, however, the librarian is not allowed to issue rare, splendid (*ouvrages de luxe*), or illustrated works, books in costly or remarkable binding, *editiones principes*, palæotypes, collections or considerable portions of a collection, manuscripts, dictionaries, catalogues, unbound periodicals, light or frivolous literature, (some mechanics' institutes do not lend novels, but the circulation in these libraries is very small compared with that of others where such works are lent), books of prints, maps, plans, or works often consulted or of common occurrence. Some libraries refuse to issue works in folio, or such as are too heavy to be easily carried; others restrict the borrower to the use of two works, and of those only five volumes

altogether, and of works in several parts only one part at a time. The librarian may be eased of many difficulties by an order, that he shall not be bound to give out any works within twenty-four hours of the application.

If the lending library be small, a register by catalogue titles, and if it be large, two registers (one by catalogue title, the other by the borrowers' names) must be kept of books lent; and it seems good to follow nearly the course adopted abroad, of filing duplicates of a ticket containing some, if not all, of the following particulars, viz.: the name of the library, the date, the number of the ticket, the press mark, &c. as given in page 26 in the form for daily use, the state of the book, the value, the penalties hereafter named, the date till which it is borrowed, the signature and address of the borrower, his authorization of delivery, and the signature of the librarian acknowledging its return: the book must be supposed to be in good condition if not otherwise expressed upon the ticket when it leaves the library, and must be returnable upon demand, even before the expiration of the time stated, however short a time it may have been out of the library; so that, in fact, the borrower gives a bond to the library, and is only to be acquitted of the possession of the book, by receiving the librarian's dated signature to the ticket, to which he is not entitled until the book has been examined upon its return.

The general duration of the loan varies from fifteen days for an octavo and less sizes, and thirty days for all above; to terms of one month for all sizes, but in some libraries three months is allowed; and if the works are not returned on the first demand, the librarian, or the committee, should refuse another loan to the offender for at least three, and not more than twelve months. Books may perhaps be safely lent for two months, but, if asked for by another person after the first fortnight, they should be, as a matter of course, demanded by the libra-

rian; even persons employed in the library should not be allowed to borrow without passing through these forms; the borrower must be a known person, an inhabitant in the town, and able, if the books be lost, to replace them; strangers and foreigners wishing to borrow, may be expected to produce a recommendation from a person who will become responsible. No book should be redelivered to the same person, until the expiration of a week from its return; at the very least it must go back to the library and be taken out by a fresh ticket, and the last person using it should be postponed to any fresh applicant. Also no book should be out during the holidays, when the registers should be cleared, a survey of the library made, and a report prepared by the committee. It would be very useful also to arrange, that all subjects of dispute as to peculation or damage should be arbitrated by some fixed person; for if the chief magistrate of the town or borough be also the legal owner of the collection, there will always be room for many inconvenient difficulties.

Public lending libraries perhaps do more harm than good in lending out their books. They are nowhere so numerous as in Germany, but they prevent the extension of the far more useful subscription lending libraries, where the speculator would always provide as many copies as may be required, and afterwards sell them cheap, thus promoting the circulation of books; whereas, public libraries actually withdraw them from a wider circulation, by lending them to the shelves of one person, without having the speculator's interest in counting how many more applicants there may be for that work.

g. The duties generally imposed upon the librarian of a public museum are, to keep the library in order; to see that books are forthcoming when asked for; to have them bound by leave of the committee, and well preserved as far as the funds allotted for the purpose will allow; to class the works accord-

ing to the arrangement adopted by the owner or committee; to keep the registers of accession and loan, the inventory of objects and catalogues; to recommend and advise the committee as to works for purchase; to buy the works that may be ordered; and to report from time to time on the collection. Whoever is entrusted with the direction of a large library, should particularly apply himself to the recommendation of works which sooner or later will be asked for, and consulted with profit, by men who desire to examine things thoroughly. He is also sometimes, and should perhaps invariably, be made responsible for losses which he does not trace to the offender. In some foreign libraries, it is expressly counted amongst the regulations that the librarian is to be polite, and that he is not to be absent, except from illness, for more than one space of service at a time. All orders to his subordinates should pass through his hands.

The general requirements of a librarian may be inferred from those which apply to a sublibrarian: supposing that the library be large enough to occupy four subordinate officers, they should all be versed in the Greek and Latin languages, and also in either French, Italian, German, or Spanish; the officer attached to the printed books, must know and understand the system of classification adopted, and be qualified to catalogue the works; the department of manuscripts requires a gentleman able at least to read the text of the mass of his materials; the officer attached to a collection of drawings and engravings must have such a knowledge of the history of art, and of modes of execution, as to give him an acquaintance with prints and masters; and the department of maps and plans requires a gentleman informed upon the details of geography and of a topographical classification: each officer's special duty is considered to be the placing, replacing, and preservation of the works, and to assist in keeping the inventories and catalogues.

A not unfrequently applicable scale of salary may be calculated in this way: a sum represented by x for the porter, $2x$ for the clerk, $3x$ for the sublibrarian, and $4x$ for the librarian; and in England x will generally never be less than fifty pounds per annum. The extreme utility of *encouraging the expectation* by the subaltern officers *of a progressive ascent* in the scale of position, and of having at the head of these establishments a principal thoroughly acquainted with everything in his collections, so as to answer visitors and teach his inferiors, does not require any further notice.

The possession of a good catalogue is of more importance to the readers and consultors of a library than to the librarian himself, because, if that gentleman be at all equal to his task, he knows the books and their places perfectly well. M. Van de Weyer's opinion is expressed in these words, "The librarians who seem to underrate the value of catalogues, want to make themselves personally indispensable." With respect to the catalogue, as well as to the arrangement of a library, every error is a great danger, which cannot be avoided except by having a sufficient number of clerks to take up every book as soon as it arrives at the library, and by employing sufficient space to place the books suitably from the commencement, when they may actually become a sort of classed catalogue in themselves. Every acquisition should be collated, numbered, and entered in the registry of arrivals, and be stamped with the name of the library on the title and on several other pages; the use of the register is to shew the rate of additions, their prices, the circumstances under which they were received, and their state; it also forms a check upon the librarian, by shewing the date of entry in the catalogue. When stamped, the librarian has to indicate the number, class, division, and section, title and author's name, on the blank form prescribed in the catalogue, and to place it among its companions. The act of giving a location appears to be the great source of trouble to

librarians; when placed to the satisfaction of the official, he has to mark, on the inside of the book and on the form, the notation of its position in the library; it is then ready for delivery to the readers, who of course cannot get it until it is entered in the catalogue or catalogues. There are many ways of conducting this part of the librarian's business, but if the book be stamped within three days of its arrival, and in as many weeks be entered in the catalogue, the librarian should be considered to work well; in some cases three months is not too much for a decision on a difficult book. The system of carbonic ink, or manifold writing, offers many advantages by abolishing the delay and errors arising from a large staff of clerks. It enables a librarian, who understands, and will do, his duty, the opportunity of making as many sorts of catalogues as he pleases. He has,

1st. A registry according to numbers, which shews the date of the arrival and stamping of every book, its price, donor or seller, state, class, division and section, position in library, and date of entry in catalogue.

2nd. An inventory, called a hand catalogue or press catalogue, according to the position of the book in the library, which will shew at every survey whether any book be missing, and if so, where it is to be found in the registry of arrivals. This, and perhaps the preceding one, should be kept in duplicate at the Town Hall.

3rd. An alphabetical catalogue by names of authors.

4th. An index of anonymous works, and of the many different subjects of which some account is to be found in the library.

5th. An alphabetical catalogue by titles of subjects.

6th. A classed catalogue, with observations upon the books, as to price, rarity, printers, binding, contents, value, &c.

In these four last, the same book may be entered many times, and the catalogues may be very voluminous; but the essential feature of the establishment of a library, public or private, large or small, *i.e.* the saving of time to the reader, is more

certainly accomplished: in such catalogues, a judicious librarian will even insert the popular names of books.

The fourth catalogue is mentioned particularly as being suggested by that in the catalogue of the library of the London Institution, of which the "Introductory Preface" contains some good remarks on the importance of classed catalogues. It is not without deference to this and the other systems of classification, that BRUNET has been taken above as a model; but one recommendation of it has great weight, namely, that it is a work which is sure to be in every large library, whereas there is no certainty of finding the works of the authors of more than *thirty other systems*. Such was the number examined by the Royal Dublin Society (a trouble how rarely likely to be taken!) which adopted an alphabetical catalogue by names of authors and popular titles, with a classified index at the end, for a library of more than 10,000 volumes.

The difficulty of warding from attacks those librarians who only care to produce a catalogue by names of authors, may be easily imagined by those who, when engaged in reading, find the disadvantages as well as the advantages of a catalogue so arranged; to say nothing of the difficulties arising from the large number of anonymous and pseudononymous books; and of those in which the name of the author is transformed by change of orthography, translation, epithet, substitution of birth-place, caprice, or fraud; there is the host of books without titles at all, or with many title pages, with false and with unintelligible titles, ascribed to men who did not write them, or disavowed by their real authors, or cases of real plagiary; books with many names on the title page or in the body of the work, collections on particular subjects, and collections on no precise subject at all, publications of academies, &c. The amount of cross references under such a system, would render the utmost pains taken in such a series of catalogues above recommended a mere

labour of love in comparison; but it must be acknowledged that much bibliographical research is requisite to establish a good catalogue under any system.

In the only published volume of the new printed catalogue of the library of printed books in the British Museum up to 1839 (fol. London, 1841), the ninety-one rules, approved by the trustees, are given at full length. Audiffredi's commencement of the catalogue of the Casanate library at Rome, is quoted by M. Panizzi with approbation. Watts's Bibliotheca Britannica is an example of the catalogue alphabetically arranged by titles of subjects; it may be said, that nearly all classed catalogues ultimately resolve themselves into catalogues by names of authors.

The want of accurate catalogues is stated by M. Guizot to be one of the chief causes of the losses in the lending libraries of France; and this danger is obviated in the United States by the course adopted in nearly all the libraries containing more than 1,000 volumes, of having a printed catalogue. The New York State library publishes a catalogue every five years and a supplement annually. Whether it be reprinted every five or ten years, a printed catalogue is a desideratum which may easily be obtained for the largest libraries in the world; and if the library be well managed, although the publication of the catalogue may be attended with some expense at first (if such publication has been delayed too long), yet the formation of the catalogue need not be costly. The whole parade made by some librarians of the difficulty of writing titles, transcribing them, entering them, preparing them for press, revising them, correcting them, &c., is only a specimen of the mystification in which learned men, not accustomed to the routine of business habits, can involve themselves and puzzle the public.

Whether manuscripts are to be classed by subjects or by

dates, by languages or sizes; whether maps and their accompaniments are to be arranged geographically, alphabetically, or as they will best bind up; which of the many systems of grouping prints should be adopted; and how to dispose of music, are portions of detail which the advice of the manager of each department can only supply from experience, and on which his successor, if equally qualified, is not likely to entertain similar ideas; good indices are the only results to be insisted upon.

PICTURE GALLERIES.

The requisites of a good PICTURE GALLERY, as a building, are not easily propounded; the client has (besides providing the site, of which mention has been made in the foregoing observations), to take the *onus* of deciding the following points:—a. The future arrangement of the collection;—1. In one or more rooms;—2. Miscellaneously, as in modern exhibitions;—3. Grouped according to the class of objects;—4. Divided according to the different schools of painting. b. The largest size of any picture likely to enter the collection. c. The number of pictures (in each division, if grouping be chosen). d. The probable aggregate size in superficial feet of each group. e. The probability of water-colour drawings and of prints being added to the collection. f. The arrangements as to the admission of the public, and the amount and nature of copying which will be allowed. g. The accommodation necessary, beyond that for the pictures, as a copying room, cleaning room, keeper's room, with conveniences for servants, visitors, &c.

All these points should be so carefully studied by the client,

as to enable him to consult with the architect upon the written decisions to be given as instructions for the plans.

There are also others, on which it is probable that the client will think his own opinion or that of his friends sufficient; such as ℔, the preservation of the pictures.

a. The arrangement of pictures with regard to their analogies of style, comparative merits, and dimensions, is an undertaking of no small difficulty. There is no doubt, that any arrangement of pictures in a very long gallery is unsatisfactory; and this length is dependent as much upon the proportion, as upon the actual dimensions. Longleat and the Louvre have equally corridors rather than galleries. Two or more rooms are better than one of immoderate length, if the building or circumstances will admit of them; economy, as well as stability are consulted also in this decision, as the partitions between the rooms give additional space for pictures, while they lessen the necessary thickness of the outer walls.

If intended to illustrate the history of painting, it must be a very poor collection indeed, which will not admit of an arrangement according to the schools of painting; but many noble collections exist, which were not formed with any such view. In general, the public hangs its pictures miscellaneously enough, and claims all the pleasure of the contrast between Turner and Teniers. To hang pictures well in this manner, is more difficult than under any other disposition, and the direction of such a task, without including the necessary manual assistance, can hardly be too highly repaid. This direction requires a general knowledge of the reputation of the different masters, combined with the eye of an artist; if more be sought for, such as decision upon the authenticity of a picture, the fee to the counsel is worth as much as the client may choose to give for the name attached to the opinion; and, if cleaning be added to the list

of necessary trouble, the owner may consider that he is acting with more economy than prudence, if he trust his picture out of his own sight, and pay cheaply for the restorative operation. This subject is further considered under ℔.

The miscellaneous arrangement of a collection is certainly the most common as well as the most gratifying to the public; it is, perhaps, less wearisome than the grouping by classes of subjects; which is the most valuable to the real student of art, because he finds, close together, specimens of the different modes of representing nature that have been adopted by his predecessors. Sir C. L. Eastlake, however, has expressed his opinion that the division of pictures by schools is the best, and this obtains very much upon the Continent, particularly in Germany. It is certainly the best for the amateur, who is insensibly taught the distinctions between the schools, and for the connoisseur, who learns to guess tolerably correctly the painters in particular styles; and it is desirable for the historian of art, as it saves the trouble of collecting his data; that is to say, as far as it can be carried, for there is no critical giant to say, "that is, and that is not, a school," of the pictures painted up to the present time; and in addition to this difficulty, is that of the spectator being obliged to see contemporaneous schools in succession. Besides these objections, others might be adduced, such as, the place of some painters, and of capricious works of others, yet the greatest will probably be, the admission of rubbish into a gallery arranged by schools, on the ground, that "many works are valuable from their antiquity, others as specimens of art; this applies to all collections of art: in order to have a complete history, a gallery must begin with the rudest specimens of all schools."

Nothing need be said, in addition, respecting the mode of arranging the pictures in a collection, except to hint to those who are desirous of presenting entire collections to the public,

that it was given in evidence, as the opinion of the present President of the Royal Academy, that pictures might be inscribed with the name of the donor, and that, when an individual gives a collection of pictures, they need not be kept together, except by previous stipulation in the case of important collections only; yet other writers are invoking Parliament to set aside such stipulations.

6. The determination of the extreme size of any picture which may hereafter be received into a collection, is of the highest importance, as a standard may be adopted which will not permit of the acquisition of a valuable work. The result of the calculations made at Munich showed that the top of the largest pictures should not be placed higher than twenty-nine feet, and the bottom of the pictures should not be less than four feet from the floor. It will be seen from the accompanying table, that this would admit of two of the largest whole-length portraits usually painted, standing one above the other; this is not mentioned as a practice to be adopted, but merely as giving a scale. In private galleries, the height of four feet gives the advantage of a range of seats, or of book-cases around the room. The size of the Sebastiano del Piombo, in the National Gallery, is fifteen feet including the frame, the picture alone is twelve feet six inches; and Dr. Waagen stated that, in 1850, there were no pictures so large in the gallery at Berlin.

Names and sizes of the usual canvasses prepared for the use of painters (the width of the frame is a matter of taste):—

Head size	24 by 20 inches.
Three-quarter ditto	30 „ 25 „
Kit-cat ditto	36 „ 28 „
Small half-length ditto	44 „ 34 „
Half-length ditto	50 „ 40 „
Bishop's half-length ditto	56 „ 44 „
Whole-length ditto	94 „ 58 „
Bishop's whole-length ditto	106 „ 70 „

It results, therefore, that a very small collection, containing even one upright "Bishop's whole-length", requires walls at least sixteen feet in height; it is true, that an example, hereafter given, plate 9, is, in execution, not so high, but it was thought better to give the truth of an executed example, although the architect, in that instance, was compelled, in order to obtain even its present height, to descend as low as possible by steps; and the distance left, so as to obtain a gutter beneath the windows of an upper story, was all that could be commanded.

c. From the foregoing remarks, the reader will draw a natural inference that the probable number of pictures, either in the whole collection, or in each group into which a gallery may be subdivided, is not a matter to be passed over as one on which no calculation can be made. It decides the number of rooms which are to be provided for the exhibition, and has considerable further influence over the general arrangements of the design; because it is known, that in some groups *very* large pictures are not generally to be expected, and that in some cases they are unattainable.

If the miscellaneous system be not selected, there are only three other groupings of pictures which are likely to be generally adopted; 1. According to the country of the painters; 2. According to the qualities of certain recognized schools of art; and 3. According to a capricious classification of subjects. In the first case, the group of each country must either be miscellaneously hung, or, if that be prohibited, one of the next two groupings must be followed. The Pinacotheca at Munich, hereafter mentioned and illustrated, plate 8, throws as much light as any example, upon the system of classification under this head.

As to the second division, the enormous difficulties, men-

tioned in a, of ranging many pictures, would always render the class of "miscellaneous" the largest in the collection; for the Italian pictures are really divisible into four schools, properly so called—the Florentine, Roman, and Venetian, with the Bolognese attempts to combine the distinguishing excellencies of each. These schools are by no means applicable in the discrimination of the schools of other countries, as Germany, France, Spain, and England; for these, other denominations of schools must be invented, to the increase of perpetual confusion.

The third division has been called capricious, because, although every one easily understands that historical, animal, and landscape painting, are three great classes, it is not so easy to decide whether portraits belong to the first or to the second —or whether subjects of still life can be placed in the last division. Even if the course were adopted of taking great and small divisions as guides (as has been done successfully for books, see page 19), there would be an impossibility, in some cases, in determining the prevalent sentiment in the picture requiring a place.

The only fault of the miscellaneous system, viz., the difficulty of hanging the pictures to advantage, is also one of the defects in every one of the above divisions. The number of pictures in each group, must therefore depend on the decision of the client as to the grouping, and as to his estimate of the relative extent due to the value of each subdivision.

d. When the preceding questions b and c have been settled, the client will meet with little obstruction in proceeding to calculate the probable space of wall to be devoted either to each group, or to the whole collection. If he has determined upon having one or more specimens of each country (and the four Italian schools must be counted separately)—or of each

class—or of one or more specimens of each great master in each country, or in each class—or of each class in each country—or merely historically to form a series, from tolerable mediocrity, through excellence, to the decline of art and its renovation—or any other combinations—are questions which no one but the client himself can solve. Some connoisseurs are content with a collection of the works of a single painter; others wish to have a specimen of every painter of a particular school.

If the pictures already form a collection, and there be no intention of materially altering, or increasing it, the course of proceeding is still further simplified; and the easiest, though perhaps not quite the best, process is, for the future hanger to provide cards, cut to the sizes of the pictures, inclusive of their frames, to a given scale, and numbered in reference to a list: then the architect, furnished with that list divided into groups (or with the cards previously arranged, if the arrangement is to be miscellaneous), is only required to provide walls that shall be accommodating to the case. It may seem superfluous to add, that the word "top" should be carefully written on each card, yet in our own practice we have seen a whole design embarrassed by an omission of this precaution.

It is desirable, of course, not to cover every blank space, at any height, merely for the sake of clothing the walls, and without reference to the size and quality of the picture. Every specimen of art in a collection should be assumed to be fit to challenge inspection, and to be worthy of being well displayed. The catalogues of the British Institution will afford ample information as to the sizes of the pictures exhibited in their gallery, and they may be taken as the usual sizes of the productions of the respective masters obtainable in this country. On reference to the plan of the Munich Gallery, plate 8, there will be found the proportion of space which was allotted to each of the groups into which the collection is divided.

e. The long-assured popularity of water-colour drawings must soon render such works necessary portions of every collection, and there can be no doubt that separate rooms must be provided for the reception of these objects; and in time fine prints will, it is to be hoped, become equally essential: with these, although too often the practice, drawings in chalk or ink, and enamel or miniature works, should never be mixed. All the classes of works of art should be separated, if their separation, by means of screens, be even the only mode of breaking the impression excited in the eye, by its previous contemplation of a particular branch of the art. It is evident that great height is not only needless, but really unfavourable in the rooms devoted to these works; for them, extent of wall is most desirable; and by having smaller apartments, the partitions will provide in some degree for this want.

f. We have already observed that the question of copying was in a great measure connected with that of the admission of the public to a gallery. On the continent generally, the public is admitted on Sundays and feast days only; while the few foreigners, who are admitted by production of their passports on any day, do not disturb the students. The Berlin Gallery, although open to the public daily, admits students on four days in the week. At the National Gallery, four days are set apart for the public, and two days only (Friday and Saturday) for the student, the hours being from ten till six. Sir C. L. Eastlake recommended that a day should be reserved, on which persons should only obtain admission upon payment. Mr. Uwins objected to the admission of young children, although he knew that Lord Liverpool wished that children of all ages should be admitted, in order that the parents might have the power of visiting the gallery also.

'Students are admitted to the National Gallery for three months at a time, to copy in oil, and are placed on a list of a

limited number, according to priority of application: if desirous to copy in chalk or water-colours, they receive a ticket at once from the keeper, provided in all cases that he thinks there is talent enough displayed in the specimens produced by the artist, to show that good would be obtained from his attendance; he recommends them to study at schools suited to their capabilities, if their specimens show a great deficiency in drawing, or in the power of painting.

The subject of copying, and the limit, as well as the facilities, to be given to that practice, also force themselves at an early stage upon the attention of the client. If a private person, and inclined to exercise liberality, he will see that it would be useless to allow a student the privilege of copying a picture, while a distracting succession of talking visitors are heedlessly walking through the rooms; he will feel convinced that the permission which he would give, cannot be usefully accepted, and he will find himself obliged to provide a room for those whom he wishes to assist; which involves the removal from the gallery of the pictures required, unless separate days of admission are fixed. This is the rule of the National Gallery: and the decision in the case of any public gallery will probably be similar, unless the client shall decide that the few, who go to study earnestly, are worth more consideration than the many, whose motives are uncertain, but whose attention may be arrested, and whose taste may be excited. A compromise might certainly be made, and perhaps it is proposed in print for the first time; the industrious student could attend with the earliest daylight, and have finished a reasonable day's work before the curious gazer had found his way to the gallery; while the mechanic, and the labouring portions of the middle classes, would not avail themselves of the open portals in sufficient numbers to distract his attention, or to prevent his proceedings.

One of the duties of the keeper in the Royal Academy

appears worthy of notice. No picture is to be copied without some alteration from the original; and every study is to be marked on the back as a copy, stating the locality of the original, the date, student's name, and keeper's signature. The object appears to be the prevention of the sale of such copies to persons who would take them for originals; that any such law can arrive at the proposed end is impossible, because, after it leaves the student's hands, the mode of manufacturing an old picture out of a new one is too well known, and too much practised. The present keeper of the National Gallery considers that there is but one reason for copying, besides that of preparation for an engraving; he propounds that "copying is a process of study; that every artist must copy to some extent in the course of his studies, in order to understand the different modes of proceeding of different artists and different schools": it does not follow from the above that it is necessary to make a complete *fac simile* of the original picture. In addition, Mr. Uwins expressed his opinion as to whether such copies as are sold, do have the tendency to diffuse among the public generally a knowledge and love of art; he considered that if really good copies were distributed, good might arise; but he imagined that such copies as were ordinarily made for sale, had a tendency to do more harm than good.

This, which is, *prima facie*, a good position, does not appear to yield to the remark of Sir C. L. Eastlake, that an artist who copies a picture for sale, is likely to do it with great attention, for his own interest. The apparent conflict arises from the use of the words artist and student; and Mr. Uwins places his views in a stronger light, when he affirms that a painter cannot make a good copy of an old master, not only without studying that master, but without a very general knowledge of art obtained from a long course of study; and he deems that no good copy of a picture can be made, unless the person copying has attained such a point of art, as to be able to paint an original

analogous to that which he copies. There is a *dictum* of Sir Joshua Reynolds, to the effect that those who spend much of their time in making finished copies, end in being unable to produce anything original: the remark is generally acknowledged to be correct, and although on the continent a great many artists seem to live by making copies for sale, Dr. Waagen, as director of the Berlin Gallery, arranges that the same artist should not repeat the same picture more than three times in a given period. We submit, with great deference, that a student should be endeavouring to make, not a *fac simile* of the article before him, but an image of what that original might have been when it left its author's hands. This limitation, with the addition of a slight alteration in the picture, and of a difference of size, may probably reconcile the contending parties as to the practice of making entire copies, which are rarely necessary as lessons to the student in painting, any more than a similar mode of study to the sculptor.

ℊ. In giving instructions for the secondary portions of the edifice, the client will have to decide the staff of officers, etc., requisite for the care of the building; as well as upon many minor arrangements. A gallery ought to have its little library, and a good collection of "galleries", or works, illustrated by prints, of the contents of large collections. A hall, servants' room, and furnace chamber, are actual necessities. A room, separated from the hall, and well warmed, is required for coats, cloaks, etc. The keeper should have at least one separate apartment, large enough to contain the largest picture in the collection. It is noticed that nearly half the students at the National Gallery and British Institution are ladies.

ℏ. The preservation of pictures, beyond the use of good warm atmospheres, may be briefly touched upon, by stating, as the results of mature consideration, that all pictures which cannot be varnished with mastic varnish should be glazed; this

also applies of course to prints, water-colour drawings, etc. But whether varnishable pictures should be glazed, depends upon the client's solution of the following questions: Are pictures to be bought as rarities of the highest importance, and to be preserved from decay at the cost of their utility? or are they to be bought as lessons in art, and to be put aside when no longer available? If they are to be considered as perishable memorials of great men, they will naturally be glazed, at whatever expense; if they are not merely subjects of a species of idolatry, they will be properly varnished, and carefully kept clean.

A commission, in 1850, suggested that the pictures of moderate size in the National Gallery might be covered with glass, and remarked that this was a mode of protection which had been found successful in some instances in galleries in this country, and, as it appeared, it had also been occasionally adopted in foreign countries. It further recommended that means should be taken to preserve the backs of the pictures from the dust and impurities continually deposited upon them, which, in regard to paintings on canvass, are believed to constitute a source of injury. Dr. Waagen observed that glass does good, but admitted that it was not possible to study a picture covered with it; he felt sure that an amateur could have no more enjoyment from it, and that the copyist could not see well enough to make a good copy when the picture is very large, as in the case of the famous Madonna di S. Sisto, by Raffaello, at Dresden. Mr. Uwins thought that glass was an excellent mode of preserving pictures, but that it obscured them very much: they are not so available, either for study or general observation, because glass before a picture, especially if it be a dark picture, makes a looking-glass of it. There are proofs that artists could copy a picture with a glass before it, but the work is attended with much difficulty: in short, there can be no doubt that having glass before it is a great impedi-

ment to the study of a picture, though a great preservation of its purity. In conclusion, we may quote Sir C. L. Eastlake, one of the commission on this subject, who admits that in the case of large pictures the whole question is beset with difficulties. He had recommended that some of the pictures in the National Gallery should be covered with glass (this is now being carried out), although he considered it objectionable that a picture should have the effect of a mirror; but thought any such objection not to be compared with the deterioration of the pictures. He had often heard those who had been copying them complain of the difficulty of seeing the pictures sufficiently to make their copies, and would recommend that the keeper be allowed to use his discretion as to having the glass removed, whenever that was requested of him.

It is impossible to say more upon the subject of cleaning, than that it is always best to confide the operation, in cases where it must be performed, to a curator or keeper who is naturally supposed to be an artist acquainted with the mode of painting which has been practised by the painter of that particular picture. Proprietors of pictures are not generally aware that almost every artist of any repute, has had one or more peculiar ways of preparing his canvass or panel, and of making his colours. Thus in some cases a picture, apparently painted with oil colours as they are now manufactured, may be nothing but a ground, which will wash up (we have even seen pictures on paper pasted on a panel), scarcely covered with oil colour, and finished in distemper; or covered with a mixture of distemper, and finished in transparent oil colours. Many pictures, also, painted on hard grounds by pupils, have been finished by their masters with delicate glazing of transparent oil colours; thus blue hills have become green, by a tone of yellow passed over them; violent reds have been harmonized with the picture by skilful glazings. In the course of time these pictures become sullied, are cleansed, and

varnished; and if the irreparable injury be not done at that time, it is almost certain to ensue when solvents or friction are applied to remove the old varnish; and, if they do not wash up the picture, the cleaners succeed in restoring the brilliancy of the picture by taking off all that master's handiwork of glazing, which gives the true value to the picture. The above are not mentioned as the only modes of making a painting; for, in reality, there are very few pictures which have been painted from first to last with pure oil colours. Cleaning, as generally practised, may be defined as flaying a picture; even the use of water is often to be rigorously avoided: Dr. Waagen says emphatically, "the greatest enemy to pictures is dampness".

At the National Gallery, sufficient supervision of the public is supposed to be secured by the presence of one attendant in each large room, and of one person for every two small rooms; besides a porter, and a person to take umbrellas, sticks, etc.

Having thus pointed out the features of these establishments more peculiarly the province of the client to determine, we proceed to the examination of several points upon which the architect is expected to be prepared with his opinion, and to decide without hesitation and correctly. This investigation will be found assisted by the explanations of the various illustrations which it seemed necessary to append, in order that the reader might easily acquaint himself with the foundations of the views herein adopted.

ARCHITECTURAL ARRANGEMENTS.

Whatever may be definitely ordered, after due deliberation, by the client, the architect has to learn the decisions upon the subjects above discussed, and to arrange in conformity with

them and his own judgment, the points here reserved as his particular province; and if the plan has been left to his own discretion, his attention is more especially directed to the contents of the following pages.

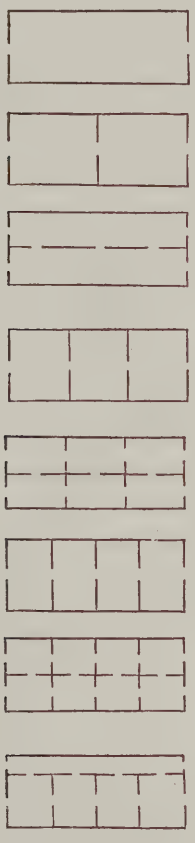
The sum to be expended upon the building should not be too quickly fixed. The general feeling as to whether a museum is to be an ornament to the town, must be compared with the sum that can be raised under the act, before the committee can decide upon their expenditure. In the case of a private client, the cost of a mere warehouse for the collection is first ascertained, and he then adds, for its decoration, the amount which he is inclined to spare for that purpose; and this is the best course for the public as a client, where no intention exists of raising at the same time *a public building*. When, however, a town is to be enriched with a collection of pictures, the general feeling of the public must decide, whether the edifice raised to receive the gallery is to cost more, and how much more, than the price of the floors, walls, and roofs. No very great error can be committed in taking, as a general notion of expense, that every lineal foot of wall space for pictures, planned in an economical manner, and not like some museums, may be multiplied by £7: this will give a sum that will provide, in a substantial but plain manner, a building with the necessary appurtenances above enumerated, for a private client. The additions necessary for a public establishment, ought to raise the limit of expenditure to £10: this falls considerably short of the expense, for instance, of the National Gallery, possessing 670 feet linear of wall surface for pictures; that is to say, our limit of expense would be £6,700. The difference between this sum doubled (on account of the rooms of the Royal Academy), and the actual cost, may be supposed to represent the amount expended on account of the site, for decorating the elevations, entrance saloon, &c.; to which must be added, that the size of the rooms also involved modes of construction much more expensive than we recommend.

Very large pictures (*i. e.* those above the size of a whole length) should not be approached nearer than twenty-five feet, and this fact was supposed to decide that rooms of fifty feet *square* are necessary for their exhibition: the fallacy is self-evident as regards the rooms, but when expectations of crowds of visitors were raised, there was a certain propriety in having grand rooms to receive them. Until galleries are built expressly to receive very large modern pictures, it will be found that a reasonable number of such productions can always be suitably hung in any well-planned gallery of moderate dimensions. Where economy (not parsimony) is necessary; rooms of less than fifty feet in length may be planned, but they need not be square; and their width may vary, according to the character of their contents, from fifteen feet upwards.

A single gallery must have a skylight, if the site allow of no other mode of lighting it; it might have windows as side-lights if the site would admit of their being unobstructed, but the next paragraph but one will show, that there are only two circumstances under which they are admissible.

The best means of obtaining the greatest extent of space for a museum of any sort, must be that plan, of gaining extreme length of cases, which involves small rooms: for example, a gallery 50 feet long and 20 feet wide, without doors or windows, gives 140 feet lineal wall; but the same space, with a wall across it, will measure 180 feet; or, with a wall along it, 240 feet; if divided by two walls across it, 220 feet are gained; and so on. Now, it may be presumed, that no architect would prefer, except under very peculiar conditions, the division once lengthways of such a gallery, to that division twice crossways, which has just been quoted as giving only 20 feet less lineal measure of wall. But when the continuation of division is required, we find that three walls across such a space, give only 260 feet; while two walls introduced lengthwise give 340 feet;

this is true, but the latter case requires a skylight for the middle compartment, and we are considering the best arrangement of a gallery with side-lights only; and, under that condition, the utmost that could be made of such a space, would be as many cross walls as possible with a wall dividing the entire length. This wall is equivalent to 100 feet lineal; but as we have hitherto neglected to deduct the doors of communication, say five feet each, we must now take them into the calculation. Five compartments, by four partitions, give about the size to which such a room could properly be reduced, and they would make up 300 feet, or, with a wall along the space, 400 feet lineal.



2 doors = 130 feet
3 „ = 160 „
4 „ = 220 „
5 „ = 210 „
6 „ = 200 „
4 „ = 210 „
8 „ = 260 „
9 „ = 250 „
10 „ = 240 „
11 „ = 230 „
5 „ = 220 „
10 „ = 280 „
12 „ = 260 „
14 „ = 240 „
7 „ = 270 „
9 „ = 250 „
11 „ = 240 „

There can be no doubt as to which of the above systems of planning will be preferred, when the depth of the rooms does not exceed fifteen to twenty feet; beyond the latter dimension, the average amount of daylight transmitted by lights on one side, is not sufficient for the ordinary purposes of a museum: the last but one example gives rooms only ten feet deep, but the architect will find that larger dimensions are attended with an infinitely greater increase of wall space, in comparison with those here calculated.

If then, the orders of the client render it necessary that there should be two or more floors, or that the rooms must be so lofty and splendid in character, that a space of at least eight feet can be left between the sill of the window and the floor, side-lights, if applicable to the site and to the contents of the collection, have a claim to attention, which is very much weakened in the two last cases, when we consider, that in such a gallery at least forty feet must be deducted, for the windows, from the lineal measure of the walls, and that a gallery, however divided, can be lighted with skylights, giving for all purposes the best possible light.

It is certainly matter of experience, that the greatest quantity of light is obtained for an apartment, when lighted by an horizontal aperture in the ceiling; and of this an extraordinary verification is to be found in the Pantheon at Rome, which, being 74 feet high to the springing of the dome, and 142 feet 6 inches in internal diameter (not including the recesses behind the columns), is most sufficiently and pleasingly lighted by an eye in the crown of the dome, with only twenty-seven feet of diameter.

Lofty rooms are certainly useful for the display of architectural and colossal sculpture; and Sir C. L. Eastlake has the merit of suggesting that in picture galleries, lofty rooms should

be appropriated chiefly to large pictures, or to pictures with large figures. The upper parts of the walls can be thus only properly filled. The space which may remain underneath, in such rooms, is not the fittest for cabinet pictures, although there may be sometimes examples, especially by Italian and English masters, which might be advantageously so placed. But small elaborate Dutch and Flemish pictures should perhaps not be far removed from the light, of which the windows, wherever they may be, are always to be considered the source. The inference which the foregoing statement seems to warrant is, that rooms of equal height are not advisable for large and small pictures; that supposing a skylight to be the fittest upon all occasions, elaborate cabinet pictures, in order to be near the eye, and at the same time near the light (for both conditions are essential), must be placed in less lofty rooms. This it is admitted might involve architectural difficulties. The problem of providing high and low skylights on the same floor (if desirable to have them on the same floor), would not be solved by adopting the form of the ancient basilica, or that of a church in which the nave is much higher than the aisles; for the greater elevation of the central room would intercept a considerable portion of light from one wall, at least, of the side galleries. It would appear needless to say that it is most desirable for a gallery of any sort, that there should be no object which can on any side overshadow the building, or be seen through its skylights; but the frequent violations of these conditions prove that they may be forgotten, although the height of the walls will sometimes absolutely depend upon them. Supposing the rooms to be upon the same floor, but of unequal height, the best mode of ensuring uninterrupted light in the smaller galleries would be to place the latter, not parallel, but at right-angles, or abutting endwise against the higher building, at the same time contriving that connecting corridors (in which drawings might be placed) should have the effect of removing such smaller galleries still further from the high

neighbouring walls. If again the rooms should not be required to be on the same floor, there would be no difficulty whatever in insuring a perfectly uninterrupted skylight in every case. The fittest place for the windows of a picture gallery, whether in the roof, or in the wall, is a question, discussed on page 68, etc., upon which much difference of opinion exists. Some are inclined to think that a skylight (always supposed to be furnished with ground glass or with movable blinds) is desirable for all pictures. This seems to have been the opinion of Rubens; for Algarotti states that the museum which the great painter built for himself at Antwerp was circular, with a single light in the centre of the roof. Similarly arranged to this and the Pantheon at Rome, page 56, is the museum at Scarborough, R. H. Sharp, architect. The internal diameter is thirty-two feet, and the skylight nine feet. There are also seven windows round the lower portion of the room.

Having decided that a skylight, with divisions or presses projecting from the wall, is the most economical mode of arranging a building to receive an unknown collection, we proceed to illustrate that proposition by a design, plate 7, figs. 3 and 4. The ground-plan may be supposed to contain the library, in projecting presses, at intervals of eight feet clear between the piers, with piers at the ends of the cases, to support the floor above. The first floor may be supposed to have tables or glass cases along the centre of the gallery, with cases, each four feet long, arranged against the vacant spaces of the walls. It will be evident that a slight partition can be put at any interval of eight feet, and can be removed as convenience may dictate, to divide the collection.

The table cases mentioned above, for a large collection, should be about 8 feet long and 4 feet wide; the stand about 2 feet $8\frac{1}{2}$ inches high, the case being $13\frac{1}{2}$ inches higher, in the middle, sloping down to about 9 inches at each side. Such a

table would be found to hold most of the specimens required in a good collection of mineralogy, geology, etc.

The present illustration also shows the manner of applying lantern lights, as skylights, for museums, etc., adopted in our private practice, and in our accompanying designs for such purposes. Other modes, adopted by various architects, are shown in the several illustrations; to which has only to be added the principle carried out in the gallery of the Earl of Ellesmere, and the large rooms of the Museum of Economic Geology and of the Polytechnic Institution. The lecture-rooms or theatres belonging to these last-named places, have skylights, and not lantern lights.

The plan of the Museum of Natural History at Paris, shewn in plate 7, fig. 2, was intended to exhibit the most recent improvements upon English arrangements. (Bauzeitung, 1838, plate 219.) The centre part consists of one floor, with a gallery on each side to contain cases, and each of the end wings is further divided as shewn in the section fig. 1, which is certainly the best portion, excepting the idea of a grand central saloon, although with high side lights. This design may be taken as a specimen of the great attention paid in France to the actual utility of museums, by the provision of the laboratory and lecture-room; and it is to be hoped, that our provincial cities will not be satisfied with buildings of less importance for such purposes.

The Athenæum at Derby, Mr. R. Wallace architect, (given in The Civil Engineer, *etc. Journal*, for February, 1839), will serve for an illustration of what has hitherto been erected out of London, with a view to architectural effect; and, at the same time, it affords an example of a building suited to the purposes of a small museum, where the site allows of light being obtained on the sides of the plan.

In a provincial town, however, it may be assumed that the most difficult site for a small museum, would be the very usual case of a piece of ground abutting on a street in front and rear, without the possibility of obtaining lights on the sides, except by loss of ground. In dealing with such a problem (plates 1, 2, and 3), the position of the lecture-room is naturally fixed in the middle of the site, with the entrance from the principal street for the audience, and with another from the other street, for the entrance of the lecturer and committee. On each side of the chief entrance is a reading room, one of which can be used as a hat and cloak room on lecture evenings; on each side of the back entrance is a room, one for the committee, the other for the secretary, and to contain any apparatus or appliances for the lectures. On the first floor, the stairs on the left hand from the chief entrance, lead through the gallery of the theatre into the museum, which is best placed furthest from the entrance; visitors pass through, and quitting it by the gallery on the opposite side, would descend by the other staircase. The library is best placed over the reading room, and thus persons wishing for works are enabled to pass by the "up" stairs to the delivery bar, and return to the reading room by the "down" stairs. It is presumed that no one would be allowed to sleep on the premises, and there is, therefore, no other floor but the basement, which would contain hat and cloak rooms, the usual washing accommodation, the heating apparatus if any, a room for the daily use of the porter, and a large evening class room, the great utility of this will appear by stating that, in many cases of serious study, a specimen may be entrusted to students, in a private room, which could not well be exposed to the danger of being handled by the public; that there should be some place in which a few persons could meet, to prevent the reading room becoming a sort of club room, which it ought not to be; and that it is always desirable to have a large apartment for the reception of duplicates, unwieldy, and imperfect specimens.

The preceding remarks apply to a museum of miscellaneous objects, or to a collection illustrating a single science; no architect will imagine that such an arrangement as that now offered, is presented with a view of accommodating heavy specimens of antiquities or plaster casts; such works require, and deserve, galleries specially arranged for them, which should, if possible, be upon the ground floor. The accompanying outline sufficiently indicates the difficulty of designing a building, for the purpose of a museum, when the extent of space, and its allotment cannot be calculated beforehand.

The plan of the public museum and library, recently erected at Hâvre, M. L. Fortuné Brunet-Debaines, architect (Gourlier, Choix d'Edifices Publics, etc. Paris, fol. 1850, vol. 3), is exceedingly meritorious. It consists of a central hall (appropriated to sculpture), and divided into three parts by two ranges of four columns. On either side of this hall, and separated from it by an open arcade, by means of which the hall is lighted, is a gallery used as a museum, the floor of which is six or eight feet above the floor of the hall, so as to afford rooms for attendants, etc. beneath. Access to these galleries is had from the hall by a flight of steps on each side of the entrance in front. A long flight of steps from the centre of the back of the hall, with other flights right and left, conduct to a picture gallery over the hall, and a library containing 20,000 volumes over the side galleries. The cost of the building, without fittings, is said to have been £40,000. It is a square of about 100 feet, not including the principal staircase, and is built of Caen stone in two stories, with columns of the Ionic and Corinthian orders.

When the means for a large building are not immediately forthcoming, the projectors of a museum on an extensive site, where the future additions are to consist simply of galleries, will find a very suggestive plan, originally meant for a small

collection, in that erected at Dovor, E. Woodthorpe, architect, (given in the CIVIL ENGINEER, *etc. Journal*, for August 1850).

The Fitzwilliam Museum at Cambridge, a library, picture, and statue gallery, will be found in the same Journal for December 1846, and will be hereafter mentioned, with regard to the mode of lighting there adopted for pictures; it also affords an example of the effect of sculpture as seen by a low side light obtained from one side only.

The following are considered the most remarkable public buildings for libraries in Europe, viz.: that of S. Mark, by Sansovino, at Venice; the Laurentian, by Michel Agnolo Buonarotti, at Florence; the Vatican at Rome; Brera at Milan; Bodleian, Radcliffe by Gibbs, and All Souls, at Oxford; Nationale and Ste. Geneviève at Paris; Ducal at Wolfenbuettel; Trinity College and University at Cambridge; Royal at Copenhagen; Imperial at St. Petersburgh; Royal at Munich; and British Museum at London. The three great private libraries, considered as buildings, in England, may be those of Blenheim, Sion House, and Luton.

Besides the accommodation described in article ¶ "Library," some public establishments might require binders at work upon the premises, clerks' offices, store rooms for works in progress, and a separate room for catalogues, etc. The subject of a "library," is one which demands much consideration with reference to economy; for, besides the system of projecting presses already illustrated, there are ways and means of saving large sums by judiciously rejecting some of the whims of past generations. For instance, how uselessly expensively bound must be the majority of the books, where glazed fronts are required for the bookcases, and how futile it is to attempt to keep wire doors locked.

The sum of £75,000 was voted, in 1843, for a building to receive the library of the Abbey of Ste. Geneviève, which had become national property in 1790. The restoration of the ancient building was once proposed, as its galleries were found well suited to the service of the establishment and to the study of the readers. But M. Labrouste, the architect of the new structure in the Place du Pantheon, appears to have given general satisfaction by the design, of which the section and plan are shown in plates 4 and 5. From these it will be seen, that the library has the form of a rectangular parallelopipedon, in which the principal front occupies one of the long sides; and that a very much smaller building, containing the principal staircase, projects from the opposite side.

The edifice consists of a ground and first floor. In the vestibule on the ground floor are four doors, two on each side, as seen in the section; those on the right hand leading to the department of manuscripts and drawings; those on the left, to that of printed books. These two main divisions of the ground floor, are each subdivided into a vestibule, two longitudinal galleries formed by the substructure of the upper floor, and a transversal gallery, which, on the side of the manuscripts, is destined for the readers. Ascending the staircase, the visitor arrives at the door of the great reading room, and enters an apartment 341 feet long, and 69 feet wide, between the piers. This upper floor is divided into two main aisles, 49 feet high, by sixteen iron columns in the centre, standing on piers about ten feet high, which form the ground floor, or lowest division, of this reading room. The columns themselves assist to carry cast-iron ribs, and a fire-proof vaulting. The two aisles communicate with each other by the two extreme arches, and by the three in the middle, the opening of the former being twice as large as that of the other fifteen. The remaining twelve arches are occupied, to a height of 4 ft. 6 ins., by bookcases, and twenty-four heat conductors, which have the appearance

of elegant stoves. The four internal faces of the walls contain the great repositories of the books; and consist of two stories, one above the other, so constructed that one is in the hall, the other in the gallery, communicating with each other by small flights of stairs, whereby the unpleasantness of a ladder is completely removed. The books are protected by a railing, at such a distance from the cases, that the librarian can pass between and take out the books without opening or shutting any door. Each of the tables shown on the plan receives thirty-four readers; and, under the galleries, a range of cabinets is provided for the use of the officers of the library, and of literary men, engaged upon important or large works; an arrangement advantageous in a large *classed* library, because a student can place himself near the books immediately connected with the subject on which he is engaged. Pipes for gas issue from the midst of the tables, to light the place during the evening hours; and the whole library is capable of accommodating one thousand readers. The iron work throughout is painted of a grey tint, resembling the natural colour of the metal, and the remainder of the decoration in the library is kept as light as possible; the greatest amount of colour has been used in the staircase and vestibule.

But inasmuch as no library, public or private, known to us, has been purposely built with a view to present economy and future extension, in plate 6, illustrating these points, will be found a plan of a dodecagonal building, fifty-nine feet diameter internally, and two floors high. The portions necessary to be built at first with this room, are shown separately on the same plate, and, with the section in plate 5, explain themselves. The walls of the main building are represented as covered, in two heights, with cases calculated to contain about 26,000 volumes; an inner row of reading tables is capable of accommodating, say fifty readers, being twelve or fourteen at each table. In the centre of the room are the

catalogue-cases, surrounding the obeliscal chimney for heating and ventilation. The place of the outer row of reading tables, as represented, could be occupied by bookcases during the infancy of the library; but when an extension should be required on either side of the nucleus, the cases could be removed, and tables substituted, each accommodating about ten persons: the total number of readers in such a room would be about a hundred and thirty. Each table should have, between it and the presses or books of reference, a space of four feet; and this, with tables 3 feet 6 inches wide, a passage of 2 feet 6 inches next the columns, and the bookcases of 18 inches deep, gives a total of nineteen feet in the clear, which is the least that can be allowed.

The polygonal form of the room is not unsuitable for the grouping of works according to that classification of books which may be adopted, and the process of extension, indicated by the dotted lines, which may be repeated to the utmost limits of the site, gives further facility for keeping unchanged the system approved. Those who are interested in the subject, are requested to compare this design, with those proposed for a somewhat similar purpose, for the British Museum, by Mr. Sydney Smirke, A.R.A., and by Mr. Panizzi, in the Return, No. 557, ordered by the House of Commons to be printed 30th June, 1852.

The evening reading room is here detached from the rest of the building, and there would be no objection to its being the repository for the lending library also. There is no doubt that, as a general rule, public libraries should be open in the evening, expressly for the sake of those who are earning their livelihood in the daytime; the greatest difficulty has been the mode of lighting, because the use of gas in a library is supposed to be injurious to the binding of the books, especially of those in russia leather. After three years of experiment, we have

been unable to detect any damage done in three small libraries under our own eyes; but every objection to the use of gas will be obviated, by adopting the system of lighting from the outside; the most successful instance of its introduction is at University College, London, by Mr. Atkinson, the secretary of the college. Whether diamond or parabolic reflectors be used, is a matter dependent upon the number and position of the lights with regard to the size and shape of the room: the real fault of gas in a library, seems to be the steady *dryness* of the atmosphere; which exhausts the moisture necessary to the preservation of the bindings.

It has been suggested, and with great truth, that the underpart of this design, which was intended for the reception of cases, unpacking, storing of journals, etc. might be advantageously turned (especially where the extension is beyond doubt assured) into the great saloon, by cutting out so much of the present first floor as only to leave a gallery, and putting the reading tables on the ground floor; this would thoroughly obviate the existence of mere cellars in the centre part.

The number of lineal feet of wall in the great picture galleries is as follows:—Munich 1,600, Louvre 1,300, Berlin 1,116, London (on the principal floor) 670, and Dresden, which as much exceeds the extent of Munich or of Berlin, as do these that of London.

The celebrated architect, the Baron von Klenze, describes the Pinacotheca (Bauzeitung, 1841, plate 417) at Munich, plate 8, as being destined to receive all those objects of art which are not in relief, such as paintings, drawings, engravings, enamels, painted glass, mosaics, etc. The first floor contains the pictures, the ground floor receives the other works.

The paintings are grouped according to schools (perhaps more perfectly effected than at Berlin), and a corridor runs the whole length [420 feet] of the building, which communicates with each separate room, so as to arrive at any particular school without going through another. The large pictures are in very large rooms lighted from above, the smaller ones are placed in lesser rooms with a side-light from the north. The principal rooms for pictures are 42 feet wide, 31 feet 6 inches to the top of the cornice, and 52 feet high to the opening of the lantern. The leading divisions of this gallery are the staircase A, entrance saloon B, and a room devoted to the exhibition of new acquisitions, C. [The good effect of this apartment in receiving a crowd, which only goes to satisfy a momentary curiosity, must be obvious.] There are also a curator's room, D, and his backstairs and reception room, or perhaps copying room, E. The ancient Flemish school has one large, and three small rooms, F; the ancient German has one large and four small ones, G; the more recent Flemish school has three large and ten small rooms, H; there are one large and three small rooms for the French and Spanish schools, I; and three large rooms, one of which is 93 feet long, with three small rooms, K, for the Italian pictures. Then there are subordinate rooms, L, for the purposes of the gallery. The ground floor is devoted to a gallery for engravings, and another for original drawings; there are also spaces for terra cotta vases and mosaics; and the other rooms contain glass, porcelain, enamels, etc. The ceilings and all the decorations of the rooms are perhaps over-wrought for the purpose of a collection of pictures; the floors and dados (the latter three feet high) are of Bavarian marble.

The museum and picture gallery at Berlin, by Schinkel, commenced in 1824, is formed on three sides of a central vestibule, and contains one gallery 204 feet long, two others each 121 feet long, and two smaller ones each 54 feet long; all are 39 feet 9 inches wide, and 26 feet high, with a flat ceiling, and the

light admitted by common windows down to the dado on the side. Screens, about 16 feet high by 20 feet long, of which there are twenty-six, divide these galleries into rooms about 30 ft. by 18 ft.; so as to have one group systematically arranged (a moderate number of pictures of the same period and of the same school together), and not crowded in the manner in which they are in the immense gallery of the Louvre. Dr. Waagen thought it was not satisfactory to look at such an immense number together, and that when a picture was put up higher than 16 feet, the fine things in it were lost.

The suite in the National Gallery, at London, consists of one room 57 ft. 6 in. by 42 ft., another 48 ft. 6 in. by 34 ft. 6 in., another 50 ft. 9 in. by 31 ft., and two rooms each 34 ft. 6 in. by 18 ft. These are all 22 feet high to the flat ceiling, and 32 feet to the ceiling in the centre above the light. Mr. Pennethorne objects that these are not sufficiently lofty, nor well enough lighted. His idea of a good national gallery was such as the Pinacotheca at Munich, or the Louvre, or the Gallery of Battles at Versailles; supposing that the galleries should be high, and the light admitted through very thick glass (free of colour), so as to be as much diffused as possible; in short, that the gallery should be a mass of light, and not lighted only by rays of light.

In the opinion of Mr. Uwins, the room occupied by the Vernon collection on the ground floor of the National Gallery, was very well lighted; much better lighted than any other room in the metropolis that is lighted with side lights; he knew no room so well lighted as that particular one, because there was an open space on both sides. This opinion, so contrary to Mr. Pennethorne's, is still proof that some artists consider side-lights better than skylights for the purpose of showing the pictures. Sir C. L. Eastlake also considered that small pictures might be seen to equal advantage by a side-light as by

a skylight. Pictures are exhibited throughout Europe, generally speaking, in galleries with side lights, which have been adopted, either from choice or necessity, at Berlin, Dresden, and Vienna, while at Paris, a side light is given to some portions, and a skylight to others, of the Louvre; and at Munich, as before observed, the Pinacotheca has large central rooms lighted by skylights, and side rooms, kept for small pictures, lighted by side lights. The directors of the galleries of Dresden and Berlin (Baron de Friesen and Dr. Waagen), both recommend the system of side lights, and it has been adopted from choice at Berlin, and (for modern pictures) at Dresden.

The Berlin gallery, which is lighted throughout by side lights, possesses some large pictures (but none so large as the Sebastian del Piombo in London), and the side lights have been found quite efficient when the light is admitted at a high angle, by raising up blinds from the bottom of the window. The least important pictures, æsthetically speaking, the interest of which more relates to the history of art, are placed opposite the windows where the light is not so good. (The paintings at Hampton Court are placed in rooms lighted by side lights, and the cartoons are very imperfectly seen by a front light.) It was a light adopted by preference, because in all the painting rooms known to Dr. Waagen, the artists had chosen a high side light, and it was supposed, that what the painter considered the best light to work by, would be the best for seeing his works. To this Sir C. L. Eastlake observes, that if a picture be painted with a side light from the left, and this is nearly always the case, we have only to show it with a side light from the right, to reverse all the advantages derived from this consideration: it may be added, that in the practice of historical, portrait, or still-life painters, the necessity of lighting the model or object to be copied, is still more important than that of lighting the picture; a somewhat elevated side light displays natural objects well, but a skylight is by no means favourable.

There is a very material difference, however, between side lights high, *i. e.* lights three or four times their own height from the floor, and high side lights, *i. e.* rising from near the level of the eye to any proportionable height; of course the latter are so thoroughly objectionable for pictures (not for a library, with projecting cases touching the architraves), that the former only are supposed in this essay.

Pictures, when hung low, or inclined forwards, have, as is well known, a tendency (especially if dark, highly varnished, or covered with glass), to reflect the light objects near them. This mirror-like tendency is by some considered to be increased by a skylight; but it will be found to be greater, wherever the windows may be placed, in proportion as the light on the picture is weak. It may be further remarked, that the inconvenience in question is not to be counteracted by placing the skylights next the walls (an arrangement objectionable on other accounts), for under such circumstances, the light on any object near the pictures, is necessarily fuller and brighter; whereas, when the lights are nearer the centre of the roof, such objects present their shadowed sides to the paintings, which have thus less to reflect.

The truth, upon this subject, seems to have been very fairly stated by Mr. Uwins, who, speaking of a preference for skylights for oil paintings, considered that side lights cannot be said to be more favourable, but that they are nearly equally favourable; the skylight diffuses light better; with a side light, the picture receiving more direct rays, there is the shadow of the frame cast upon the surface of the picture, and only a few pictures can be well placed in rooms lighted with side lights, because every inch from the window the light diminishes in intensity.

As very particular attention was given to the subject of

lighting the Fitzwilliam Museum at Cambridge, G. Basevi, architect (given in the CIVIL ENGINEER, *etc.*, *Journal* for December 1846); and as the advice of Sir C. L. Eastlake was obtained, it may be useful here to remind the reader that the principal floor of this edifice contains a picture gallery 67 ft. long, by 39 ft. wide, and 27 ft. high to the frieze, which occupies 3 ft. 6 ins. more, and from which springs a coved ceiling, carrying a lantern-light, divided by draped and winged figures. *The horizontal ceiling of the lantern-light is divided into compartments enriched with open panels; above these are conical skylights*, which are 53 ft. from the ground.

Sir C. L. Eastlake, in 1848 (Appendix to Report of 1850), thought it a great defect to make all the rooms of equal height, for all pictures; for if small and delicately finished Dutch pictures are placed in a very high room, calculated to receive a large number of pictures, he thought the light could not be strong enough to exhibit such pictures well: he considered that it should be a condition in the exhibition of small pictures, that they should be near the eye, and near the light; consequently, he would recommend for such pictures, either a light that was not very high, or a side light. If pictures are seen by a side light, he thought the plan recommended by Professor Magnus of Berlin (published at Vienna in Nov. 1839) was very good, and had called the attention of Sir Robert Peel to it. (C. L. EASTLAKE, R.A., *The National Gallery—Observations*, etc., 8vo, Lond. 1845.) "He supposes a room to be at least five-eighths of its breadth in height, its length to depend upon the number of paintings to be placed in it; windows, reaching nearly to the ceiling, and about five feet from the floor, are opened on both sides. The width of the windows he proposes should be a fourth of the breadth of the room, and also of the piers between them; screens are then introduced, placed at an angle

Fig. 1.

of 62° with the wall, Fig. 1. The pictures to be placed on the screens require to be removed five or six feet from the wall, the useless space serving for doors of communication. This principle is unquestionably best adapted for a circular building, since the oblique screens would then present an architectural regularity, as shown in the design of Professor Magnus, Fig. 2. The extent of the screens, from the external wall towards the centre, would be regulated by the light, leaving a circular space in the centre for staircases. Opposite to each window a statue is supposed to be placed. The same contrivance would be available for more than one story, and might be combined with the employment of a skylight in the uppermost room."

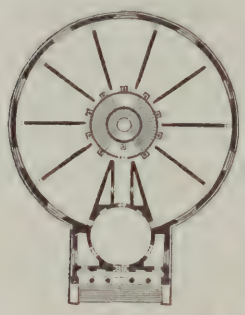


Fig. 2.

This plan Sir C. L. Eastlake considered to be the least objectionable mode in which a side light could be employed, although fitter for modern exhibitions than for a national gallery. On the whole, he saw no reason to alter the opinion expressed in the Report, on the mode of lighting the Randolph Gallery at Oxford, viz.: that the window or source of light by which a picture is seen, and the picture itself, ought not both to come within the range of vision at the same time: this general condition may comprehend the side light under the restrictions above alluded to; but it may be safely asserted, that a light from above, if sufficiently abundant, is always the fittest for large pictures. He stated that the perfection of such a plan was mentioned to him by Sir Charles Barry. This celebrated architect gave as evidence, that he remembered the room in which this arrangement was applied; that it was the room, built expressly for the purpose, in which Benjamin West exhibited his pictures, a short time before his death; that the room was destroyed; that the effect was considered most advantageous; that he never heard with whom the prin-

ciple originated; and that he never saw a gallery lighted upon that principle, but that he should say it was the correct principle of lighting a gallery with effect; that the advantage of the plan was, that it avoided all tie-beams, and consequently that all sources of shadow which might be cast on the pictures were done away with. His own sketch exhibited a room ninety feet by sixty feet.

Now, this evidence requires the observations, that we have little doubt that the suggestion originated with our parent, the late Mr. J. B. Papworth, who was intimate with West; that he often spoke of the room with satisfaction, as a successful experiment; that the room still exists, converted into the chapel called the Apostolical Church, where the late Rev. Edw. Irving used to preach, in Newman-street, Oxford-street; and that Mr. Papworth built another perfectly successful gallery, on the same principle, in 1829-33 (Picture Galleries, h), for John Allnutt, Esq., of Clapham Common, whose collection, placed therein, is always open, by the liberality of its owner, to artists and amateurs. The section of this room, given in plate 9, shows a width of 28 feet 6 inches, and a length of 36 feet. Its possessor has, from experience, no doubt that it is the best lighted gallery in England, and perhaps in the world. West's room had no central light in it; but it was considered desirable to place one in the Clapham gallery, in consequence of the intention to use the apartment as a morning room.

Sir C. L. Eastlake mentioned at the same time, that a gallery, for a temporary exhibition of modern pictures in Rome, had been lighted on the same plan, and that there was a screen suspended from the top of the room. Such a plan rivals the one just explained, in having no columns; and this is such a decided merit in a design for a public picture gallery, that no effort should be spared to obtain it. As will be seen in plate 10, we have suggested a construction of roof on the principle of those

at the Polytechnic and other institutions in London, but with lights differently placed: the section more resembles the system adopted at the Pantheon Bazaar in Oxford-street, where the experiment of a screen might be tried on a large scale. Any client, in deciding upon erecting such a building, must take warning not to confide its execution to any but a professional man, as the arched beams require great skill and care in their design and construction. The space between the longitudinal walls may be converted into cabinets, serving for small pictures, libraries, and collections of curiosities, on the first floor, with officers' rooms, etc., below.

In the Clapham gallery there is no difficulty from any overshadowing of the building in consequence of its position, as mentioned on page 43; on looking out of the lights, nothing is seen but the sky: and the system affords a means of building high or low rooms similarly or differently lighted, closely connected, and on the same level.

A remarkable mode of lighting, somewhat similar in section to that of the Pinacotheca at Munich, is shown in plate 8, by the section of the gallery built, in 1827, for the Academy of Arts at Venice. (Bauzeitung, 1836, plate 78.) The upper floor consists of two rooms, each about 44 feet 3 inches wide, and double that in length. Each room is lighted by two skylights, each 18½ feet square where they touch the cove, lessening to about 12 feet square at a false flat skylight, having moveable blinds to break the rays of the sun. The result of the effect is not mentioned.

The reason that many galleries fail of success is, that they are over lighted; and few persons comprehend this defect. Of course, if the room be placed in the condition of having a roof of glass, none could be more lighted; but it would be as bad for pictures as the open air; the glare of light, as it is termed,

would be too great; but there is really no glare in the case, it is a consequence upon some laws of optics, which we will now endeavour to explain.

Experience has shewn us, that the light upon a picture may be supposed to be confined within planes drawn from the boundaries of a light to the boundaries of a picture; and it was found, by experiment, that there was no reflection when the eye could not get within an angle of 28° to 32°. Professor Magnus fixes it at 28°, but say 30° of those planes. Thus in Fig. 3, representing the plan of a gallery with a side light A C, opposite the picture B D, we wish to show that the spectator will always be subject to a reflected light, when he stands between the boundary planes, A B and C D; and also that the same defect arises until he has passed on either side beyond the angle of say 30°, as A B F and C D E; but then he would come under the influence of the light I K, so that he must continue further off, beyond the angle K D L, or I B M. This defect may be obviated by raising the source of light so high, that the spectator may always be able to view the picture without coming within an angle of 30° with its boundary plane at bottom: thus in Fig. 4, where M N represents the height of the eye or horizon, the bottom of the light must be fixed above a line forming an angle, N M O, of 30°, and it might then be made a continuous window along the side of the gallery. The angle O P Q is well situated. Every reader will perceive that, if the bottom of the window be so low as R, it would be impossible for the spectator to place himself out of the angle R M S. Of course a picture at G H, Fig. 3, would fall under the influence of the lights A C and I K; and

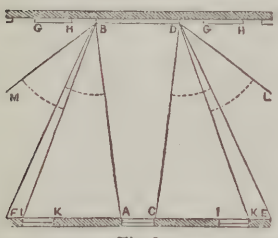


Fig. 3.

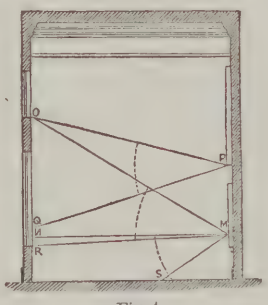


Fig. 4.

this inconvenience is only to be remedied by single lights in each room, or by the use of screens hung to the sides of the windows, so as to shut out their influence upon the picture which is at the time being viewed; it therefore follows, if the above rules are founded in justice, that the windows of a gallery thus lit must be very far apart indeed; and any gallery with windows on *both* sides must of necessity have a double reflection.

We can state with confidence that a plan and section of any building ought to show at once whether the pictures hung upon its walls, will or will not be rendered indistinct from the eye of the spectator catching the reflection of the light; and, as the eye can only see within an angle of say 60°, there can be no difficulty in placing the light so that he shall not see it and the pictures at the same time.

With regard to the system in use at Berlin, if it were adopted with *moveable* screens, it would be extremely useful in cases where long and narrow galleries only can be provided; by this arrangement, although the same general effect from the size of the room is not produced, there is a great deal more space for hanging pictures, and the system may be said to double the length which would have been given by the walls only, as proved by the diagrams on page 55. When new walls are to be erected for picture galleries, or when there would be occasion for new plastering, the walls should be battened and finished with boarding.

It would always be interesting to place engravings, illustrating the history of any particular picture, in its vicinity. A sketch of each side of a room, showing the outline of the pictures, etc., and any curious matter connected with them, will be found an agreeable addition to every catalogue, beyond the information of the painter's name and date, and the subject of the picture.

The principle of not suffering the eyes to be dazzled by a brighter object than the object contemplated, suggests the expediency of avoiding a superabundance of burnishing in frames, especially in unbroken lines, and very near the picture. An attention to this particular is still more necessary as regards old pictures, the tone of which has been lowered by time. The author of *The Pleasures of Memory*, many years ago, had all the frames of his collection varnished, and with very good effect; the advantage of this expedient has been found to be twofold; the brightness of the gilding is agreeably mellowed and softened, and the frames, when they require cleaning, may be washed without much injury.

With respect to the colour of the walls on which pictures are to be hung, we must again quote Sir C. L. Eastlake:— "It may be observed that a picture will be seen to advantage upon a ground brighter than its darks, and darker than its lights, and of so subdued a tint as may contrast well with its brighter colours. The choice of that colour for a room to hold all pictures, should be regulated by the condition of its harmonizing with the colour of gold, with which it is more directly in contact; but this is not all; supposing the most advantageous hue to be employed for the wall, it is not to be concluded that boards painted of that hue will have a satisfactory effect. The refined and harmonious tones of pictures, and the soft splendour of gilding around them, require to be supported by materials of corresponding richness, or at least by a certain finish, in the appearance of what surrounds them. The whole question is of less consequence, where paintings are numerous enough nearly to hide the walls; but while the latter make a considerable part of the impression on the eye, that impression is not to be neglected."

In exemplification of these remarks, we may add that we have superintended the hanging of a room, destined to receive

pictures in open-work frames, with cloth of a deep purple colour; and that the pictures, such as Claudes and Cuyps, placed upon the walls, are deemed to be exhibited to great advantage. For a gallery of Rubens and of works of that school, a deep red has been used to a considerable extent to our satisfaction; but that red is one not easily gained: pure drop lake is essential to the formation of the tint, and it is rarely that decorators will produce so expensive a colour. For works in water colour, generally speaking, a quiet tint, inclining to citrine or russet, is exceedingly successful, and the more neutral the better: for engravings, any colour but blue may be adopted, if care be taken not to let it be too deep; when economy is advocated, mossy patterns in paper hangings will be found good expedients.

CONCLUSION.

It is unnecessary to enter into the statistics (which are about to be furnished by government authority) of mechanics' institutes, or of *soi-disant* literary and scientific institutions, to prove that most of these establishments no longer fulfil their original intentions. So much is it the case, that Birkbeck or evening schools have just discovered themselves as the new form which must be adopted by the advocates of extended education; while many literary, etc., societies are so embarrassed by debt, as to seek to maintain themselves by a series of "lectures" and "readings". The real value of these performances is a matter which has perhaps not been argued; yet it requires most serious consideration. It will not be denied, that amusement is sought by the committees of such establishments, and that Sir Isaac Newton would not find his services in request, unless his programme promised a subject which, by a mild equivocation, is termed interesting, but should properly be called entertaining. We may quote a paragraph from the report of one

of the best of these establishments, and forbear to give a list of the subjects selected. "These lectures are of a popular character, combining useful knowledge with much that is attractive and amusing." The list includes, besides two dramatic recitations, and two concerts "by the distinguished ——— family", eleven subjects, of which more than half are little else than "a night with ———", and, as such, are properly a sort of dramatic performance; to which *serious* families go, because it is not given *at* a theatre; to which the idle go, because they find themselves in *genteel* society; and others, because they are supposed to afford opportunities for the indulgence of youthful vanity and speculations.

But if the real intent of a lecture or lectures be to give a series of demonstrations, which shall facilitate the comprehension of books by those who are really studying; shall show the relation of the specimens in a museum to the different branches of art and science, and to each other, with their purposes and uses; and shall teach the history and value of engraving, painting, sculpture, and architecture, and their application in daily life (of this sort are the orreries, the lectures to pupil teachers, given by the Department of Practical Art, and the chemical lessons given everywhere), something better must be found than the tribe of really clever men, who talk amusing platitudes, and recite interesting passages; or who, although paid for their trouble, weary their audiences by an iteration of the alphabet of science, and of the good to be derived from listening to it, whereas the illustrations around them, while new, are often the only thing regarded by the assembly.

Independent of the practical demonstrations above proposed, as being useful to such auditors as require to be edified in the same manner as the pupils of our best professors, who indicate the way to learn, the objects and works for study, and the highest as well as the most novel features of their

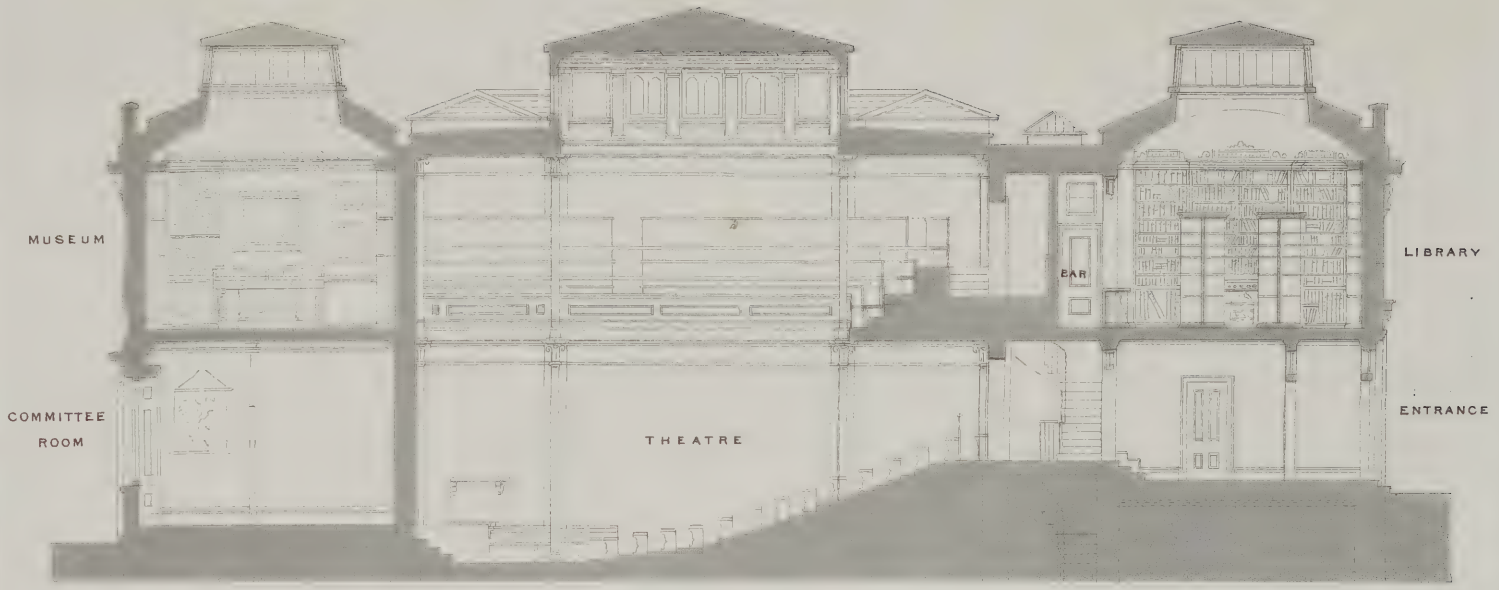
particular science, it is necessary to provide classes for teaching the alphabet and grammar of the various subjects which are undertaken,—in short, the technology and manipulation; as principles and results only can be treated effectively before large audiences.

If these sentiments contain the truth, as suggested by the decay (in spite of the attractive and amusing character of the lectures falsely styled popular, as if the public could not understand and appreciate something better) of so many institutions throughout the country, it may be supposed that the only means of turning to good account the stores which they have collected, is to take either a lower standing, as evening classes for mere tuition on subjects not usually taught in schools, or to adopt the provisions of the "PUBLIC LIBRARIES ACT, 1850"; and thus, disembarrassed of debt, take, like the proposed institution at Birmingham (see the local journals for January 1853), a higher standing, and give, in addition to such classes, demonstrative lectures in the rooms of MUSEUMS, LIBRARIES, and PICTURE GALLERIES.

FINIS.

THOMAS RICHARDS, 37 GREAT QUEEN STREET.

MUSEUM.



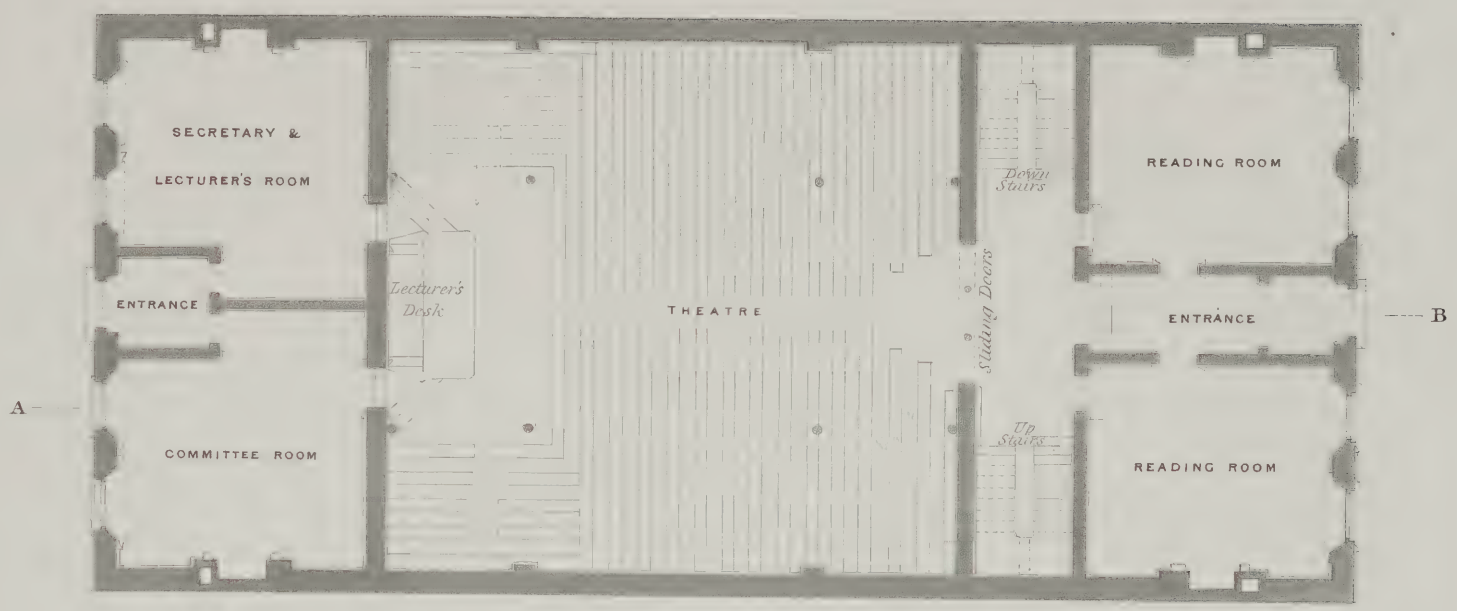
SECTION *at* A--B.
Plates 2 & 3.

10 0 50 *Feet*

J. W. Papworth, Archt. 1852.

Published by Chapman & Hall, London, 29th Jan.y 1853.

MUSEUM.



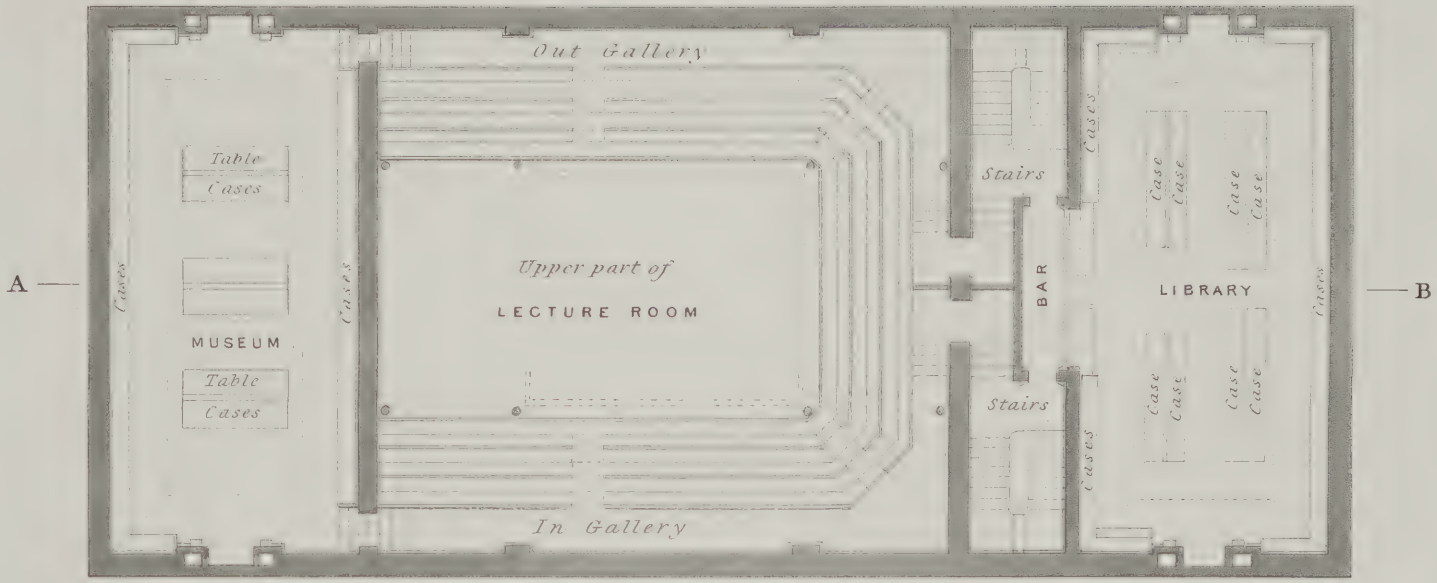
PLAN OF GROUND FLOOR.

See Plate 1.

J.W. Papworth. Archt. 1852.

Published by Chapman & Hall, London, 20th Jan.y 1853.

MUSEUM.



PLAN OF FIRST FLOOR.

See Plate 1.

10 5 0 50 Feet.

J.W. Papworth, Arch.t 1852.

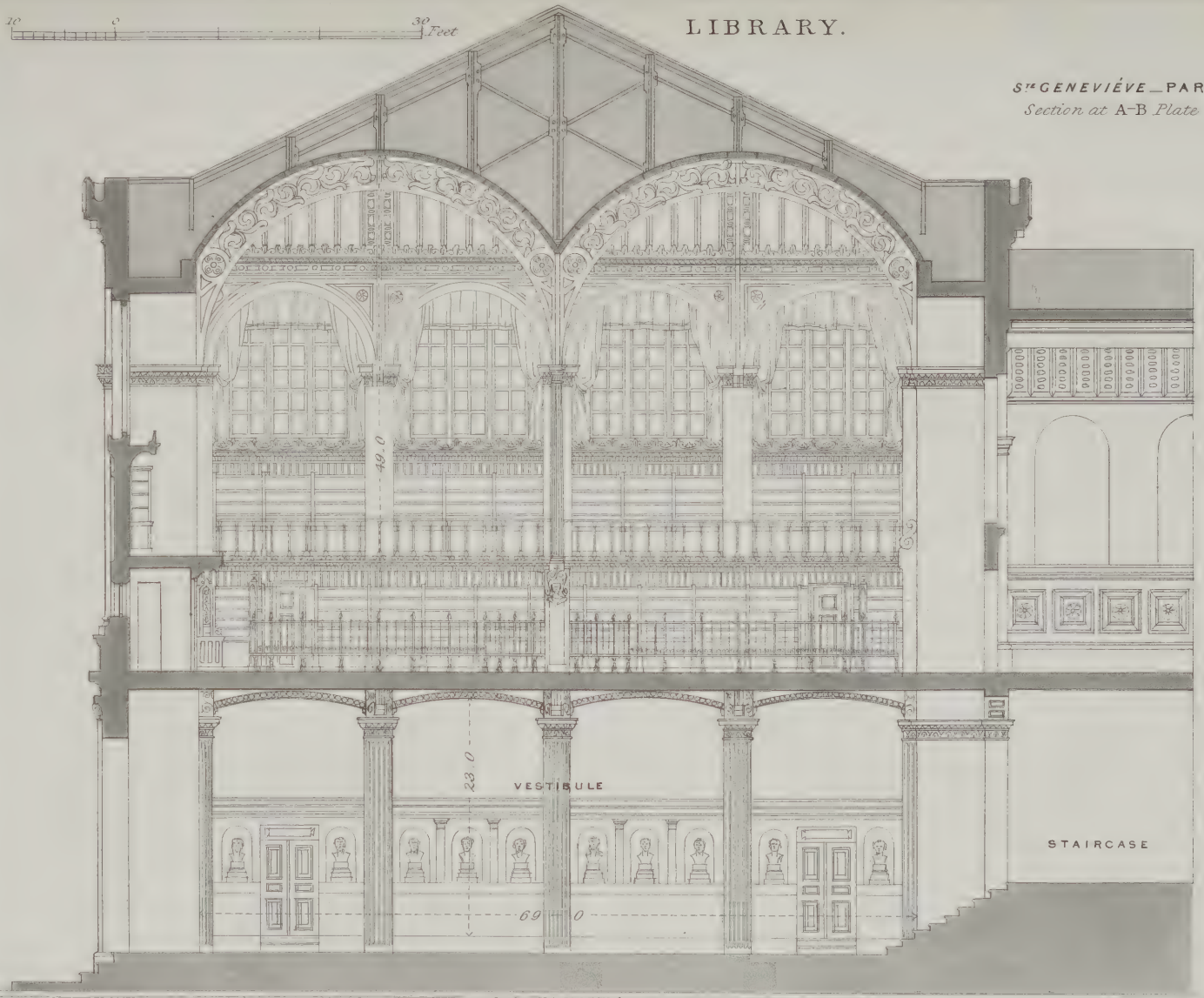
Published by Chapman & Hall, London 29th Jan.y 1853.

10 0 30 Feet

LIBRARY.

STE GENEVIÉVE — PARIS.

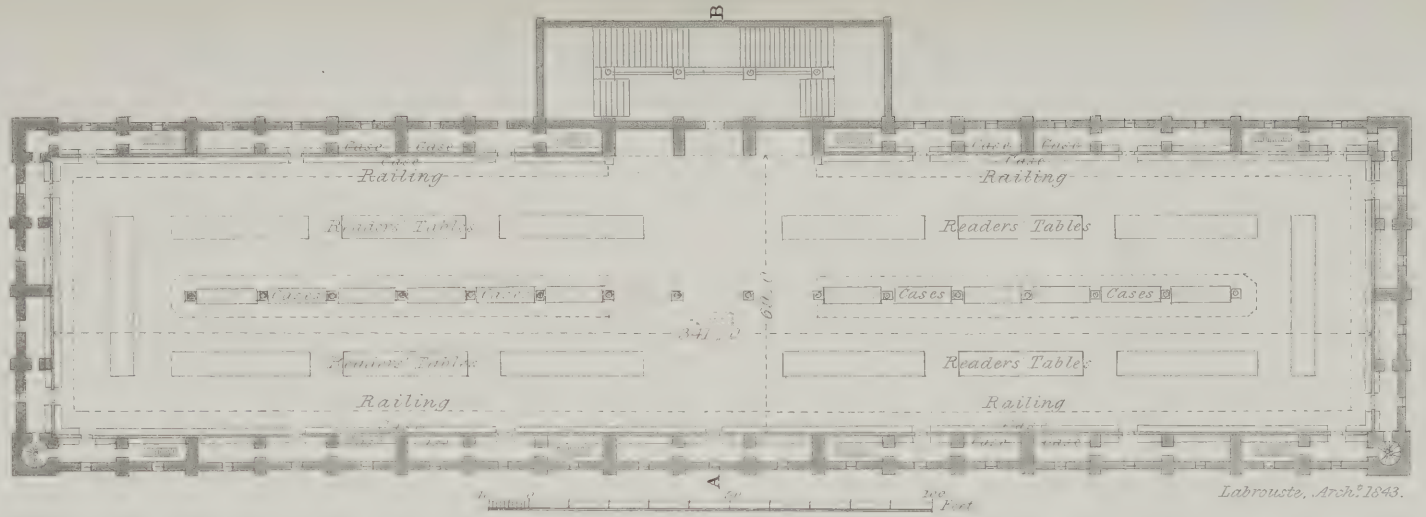
Section at A–B *Plate 5.*



Labrouste. Archt 1843.

Published by Chapman & Hall London 29th Jan.y 1853.

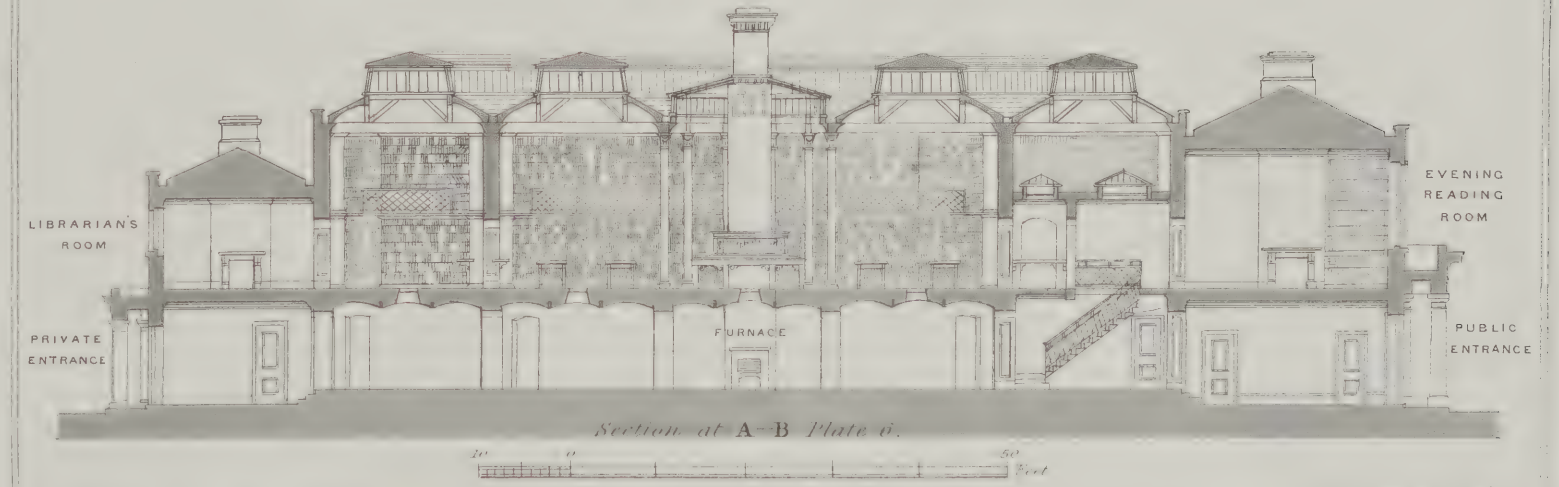
LIBRARY.



Labrouste, Arch.t 1843.

STE GENEVIÉVE — PARIS.

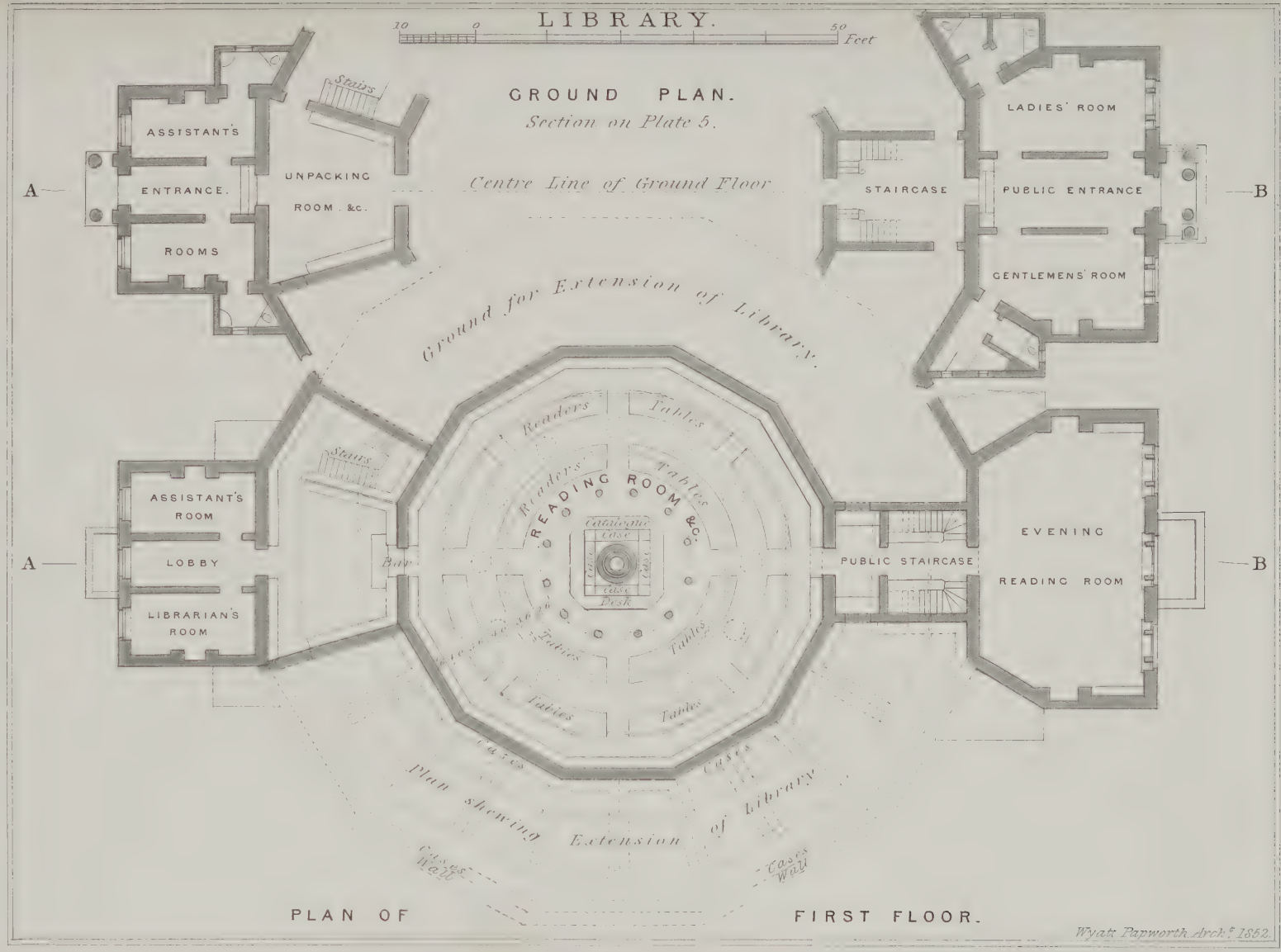
Section in Plate 4.



Section at A–B Plate i.

Wyatt Papworth, Arch.t 1852.

Published by Chapman & Hall London, 29th Jan.y 1853.

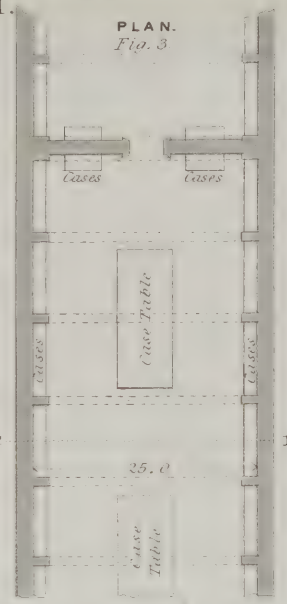


Published by Chapman & Hall, London, 29th June 1853.

MUSEUM.

Fig. 1.

PARIS.
Section at A–B Fig. 2.



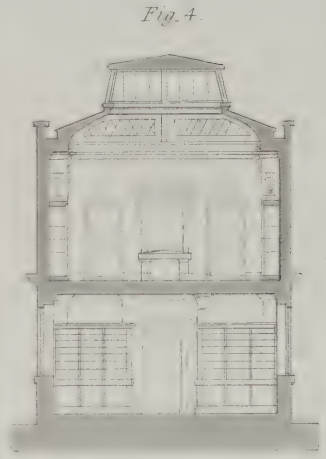


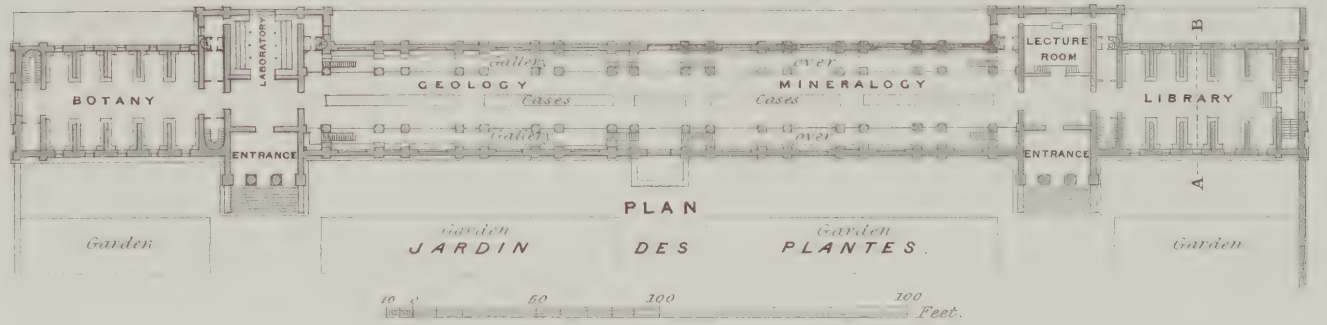
Fig. 4.

LIBRARY, with MUSEUM over.
Section at C–D Fig. 3.

J.W. Papworth, Arch.t 1852.

Fig. 2.

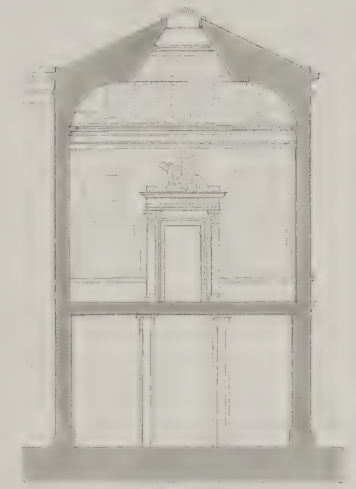
MUSEUM OF NATURAL HISTORY — PARIS.



Rohault de Fleury, Arch.t

Published by Chapman & Hall, London, 20th Jan.y 1853.

PICTURE GALLERY.



VENICE.

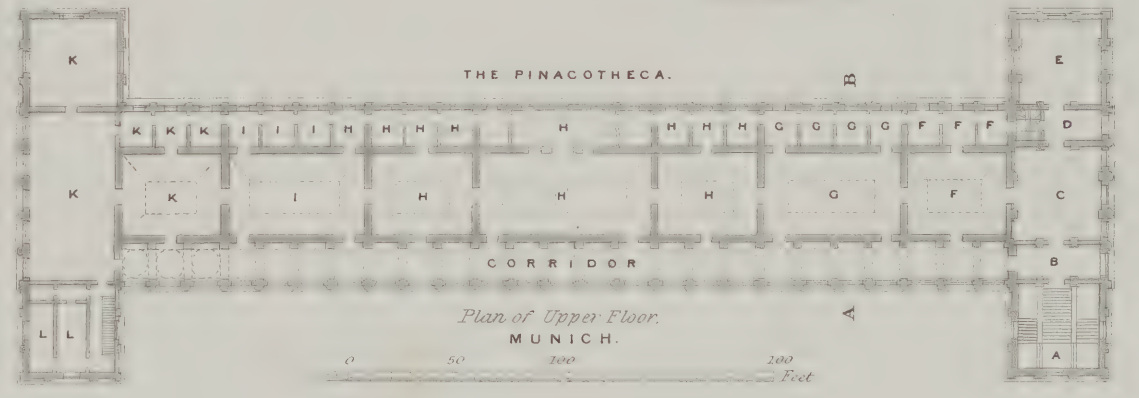
10 0 50 Feet

Lazzari. Arch.t 1827.

MUNICH.

10 0 50 Feet

Section at A–B.



Plan of Upper Floor.

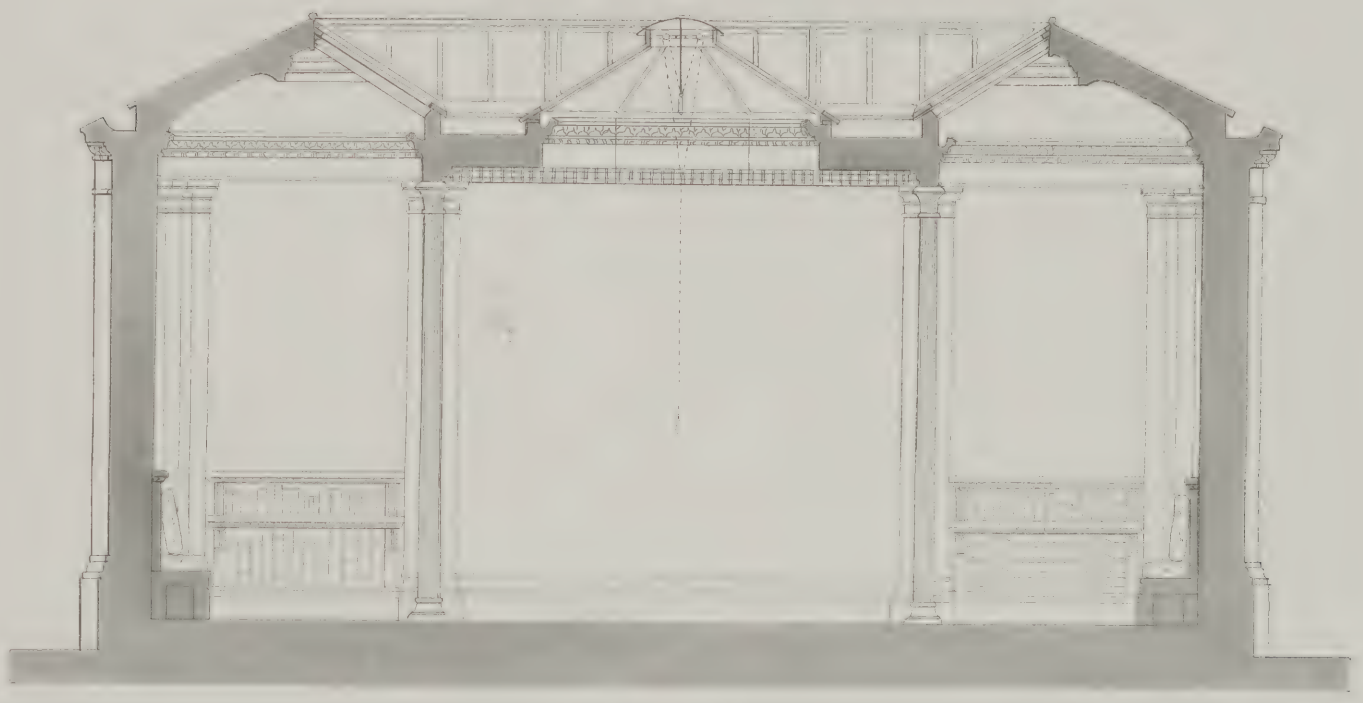
MUNICH.

0 50 100 200 Feet

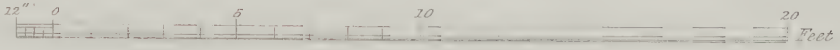
Klenze Arch.t 1826-36.

Published by Chapman & Hall, London, 29th Jan.y 1853.

PICTURE GALLERY.



SECTION



John B. Papworth Arch.t 1829-33.

Published by Chapman & Hall, London, 29th Jan.y 1853.

PICTURE GALLERY.

SECTION.

10 5 0 10 20 30 Feet

Wyatt Papworth, Arch.t 1862.

Published by Chapman & Hall, London, 29.th Jan.y 1853.